Office, No. 128 W. Baltimore St., Baltimore,
nearly opposite American and Sun Buildings.

Subscription, $1.50 a year.
To Clubs of five, 1.00 a year.

AGRICULTURAL CHEMICALS

FOR MAKING YOUR OWN

FERTILIZERS.

We import or manufacture a full line of the above goods, such as

Super-Phosphate of Lime, Raw and Dissolved Bone, Potash Salts,

Sulphate of Ammonia, Nitrate Soda, Sulphate Magnesia, &c., &c.

We are also authorized to compound the celebrated

STOCKBRIDGE MANURES.

☞SEND FOR PAMPHLETS AND PRICES.☜

WM. DAVISON & CO.

104 West Lombard Street.

GEORGE PAGE & CO.

No. 5 N. SCHROEDER STREET, BALTIMORE, MD.

Manufacturers of PATENT PORTABLE STEAM ENGINES,

The Boilers the Safest and Most Economical of Fuel Made.

Stationary Steam Engines and Boilers, Patent Portable Circular Saw Mills, Sash, Muley and Gang Saw Mills, Flour Mill Machinery, Grist Mills, Shafting, Pulleys, &c. &c. ☞AGRICULTURAL ENGINES A SPECIALTY. Lath, Shingle and Barrel Machinery, Leffel Turbine Water Wheels, Wood Working Machinery, all kinds; Tanite Emery Wheels and Grinders, Circular Saws, Saw Gummers and Tools and Mill Supplies Generally. Agents for **NICOLS, SHEPHARD & CO.'S VIBRATOR THRESHING MACHINES. ☞COMPLETE THRESHING OUTFITS FURNISHED.** ☞Send for Descriptive Catalogue and Reduced Price-List.

THE

AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. VII.—No. 7.] JULY, 1878. [NEW SERIES.

Education, Capital, Association, Necessary to Success in Farming.

From an address under this title, delivered by Chas. T. Cockey, Lecturer of Baltimore County Grange, at its last meeting, we make the following extract:

I shall consider more those great and general principles from which all the improvements in society must originate, and by which our agricultural interest may, in my view, be most promoted, than any particular practices from among the great variety which are to be found in its pursuits, and which are so often supported only by partial or local laws as not to admit of general application.

A history of all the various practices of the world, from the first ages of agriculture to the present time, would not probably result in a just recommendation of any one as generally applicable to our country and climate, and to the character of our agriculturists. A free country, in which we may consider generally every farmer as the proprietor of the acres which he cultivates, a climate embracing every variety, and land diversified by every distinguishing property of soil, is not, perhaps, susceptible of rules from countries where the farmer is not as free, where the climate is not as variable, and where the soil is not similar to our own.

We often see our farmers in debate go across salt water to get evidence to bear them out in argument, but the systems for our country we must create and prepare for ourselves.

They must be such as will embrace, in their comprehensive character, not only all that will apply to the best cultivation of the earth, but to all that will conform to the habits, morals and manners of man, considered not merely as a farmer, but as a rational, intelligent and enlightened citizen of a great, free and independent nation; of a nation that aspires to greatness and to glory *only* by means of those equal rights and equal enjoyments of all the blessings of civilized society, to which every individual member of it is entitled. In such a nation a system of agriculture must be founded on a system of education, equally adapted to all the members of the great community of agriculturists,—a class the most numerous, the most independent, and the most useful to society; and whose character in it should no longer be confined and circumscribed chiefly in the mechanical labors of the field, to driving the team, and to holding the handle of the plow. This great class of men aspire to greater and higher attainments. If they would advance the real interest of, and attain the profits of agriculture, they must aspire to a system which unites *them* to practice, science to skill, and industry and learning to labor; literary leisure to all the arts of moral life; and virtue and knowledge to industry, economy and independence. The sun of science must illuminate their fields. In fine, man must be prepared, by an appropriate education, for their culture; for it is not by only living in the country, even from infancy, nor by constant plowing and sowing and reaping every successive year for a long life, that we can become better and more successful farmers; these practices only qualify each succeeding generation to walk in the same furrows as their predecessors; but it is the mind of the farmer which must be prepared for the field; it is from the head that directs, as much as from the hand that executes, that good results and great improvements are to be expected in agriculture.

The three great sources for its advancement, to which I would particularly direct your attention, are *education*, *capital* and *association;* the first and the last-named I am proud to say are two of the grand features in our society, and we have a principle which, if closely adhered to, will obtain for us the other. Without the first the union of the other two would be vain and inefficient; by their united influence a new order of men and things would be soon perceptible, and it has heretofore languished principally because these several means have been withheld from it.

What has been done by our legislatures to assist us in being or making better farmers than we were a hundred years ago? Nothing. But to the contrary much to deter our progress and prevent our success.

Has agriculture been admitted as a sister science in any of our universities? Has any school or college of agriculture been established on principles that might possibly allow it to succeed? Has any agricultural association been invested with any powers, or been provided with any means, for its advancement? Has any capital been concentrated in the country, and adapted to the aid of independent farmers? Has even one petition presented to our legislatures, by our best, wisest, and most practical citizens, (those who study and have the interest of the country at heart, and know from close observation just what is required to insure success, or help us on in our vocation,) been granted? No! Then is not agriculture a blank page in the numerous volumes of our statutes, and they who are following it as a profession looked upon as boors by the artificial people of our country; while commerce, manufactures and the arts, as well as other professions, are protected and encouraged by the excitements of capital, the inducement to education and the powerful stimulants of appropriate associations? Why should it happen in our free and happy country that the farmer's education should be the most neglected? I withhold the answer. But is it not equally useful to him in his profession? Is it not as essential to the happiness of himself and family as to any other class of the people? What science does not agriculture embrace in its comprehensive character? It claims all nature for its field and the God of nature for its peculiar patron, who commanded us to cultivate the earth,—who has not only given us corn and wine and oil for our sustenance, but has embellished it with fruits and flowers that our path might be pleasant as well as profitable. Yet, I ask, why should it happen in our country that he who treads these paths as his peculiar possessions should be generally so ignorant of the whole phenomena of nature,—his proper and legitimate inheritance? Of the earth what does he know but that it is dust? And of the water, and of air, and of heat, and of light—these great principles of agriculture—what does he know but that he is ignorant of every attribute with which science has invested them. Why, again, let me ask, why should it happen that the independent farmer, whose own land and whose own labor have produced the staples which create and support the commercial prosperity of our city—why should this farmer, whenever he enters their gates, be considered as always performing the character of the clown among the *dramatis personæ* of practical life.

These things are only because an appropriate education has never been given the farmer. He has been too generally considered, as are the peasants of other countries, with whose character he has nothing in common, save that he cultivates the fields; but not as they do; it is his own paternal acres, or his own acquired possessions; his own freehold farm that he tills for his own exclusive use and benefit, without the payment of any tax or tribute, which he does not himself, or by his representatives, impose.—Should not this farm, so acquired by useful industry, and so cultivated by the hands of its proprietor, be as much deserving of the patronage of the legislature as commerce, manufactures, or the arts? Would not this farm be made a happy home to its possessor by those who are the guardians of the public morals and manners, by such a system of education established and supported by our laws, as would enable the farmer to qualify himself for his due rank and station in society.

Let us not, however, be discouraged because we cannot individually and immediately command these sources of our improvement, education, capital and association, as a better means of improving our condition. All great ends are attained by small beginnings and from solid foundations. The largest rivers, which spread fertility and plenty, have their sources in the smallest springs. We should begin at once, both with the present practical farmer and his children, and try to find something in the experience of this generation that may be profitable to the generation yet unborn.

Who, that has the spirit of an American farmer, can see without sorrow the destiny of the tenants of our fields—a youth of intemperance, a premature manhood, a life of labor, and old age of ignorance; such as is too often the career of our countrymen, since where there is no education in youth there will be no improvement in age.

And although we, in the United States, are before many and even most countries in a knowledge of the blessings of liberty and independence, and in the enjoyment of most of the advantages of a free government, yet we have not as farmers availed ourselves of the benefit and blessings of a good education,—either by originating any system of our own, which may be best adapted to, or by adopting those which have been found most useful to agriculture in others. Let not our association think it beyond its power, or that it is not a part of its duties, to be useful in bringing about a change so important to our country, so essential to our agricultural advancement. Some of us may labor in a larger, some in a smaller field; the whole State will not be beyond the influence of some one; many farmers are extensively known throughout the State and have influence, and even the limited sphere of a county will not be found too small for much useful exertion: in each department, then, let us respectively exert ourselves to create such an influence as will effect the great object,—of an appropriate education for the farmer,—together with teaching them mechanically to plow, to sow and to reap, to drive their teams to market, to sell their produce and to count the cost. We should take the proper steps to teach them how to analyze the soils of the fields of which they are the proprietors; how to discriminate between their grains and grasses, as well as the different brands of fertilizers; how to ascertain the peculiar properties and benefits of each, and how to adapt them to their fields; to calculate how much happiness is added to human existence by the blessings of knowledge, and how much ignorance detracts from it; how much sobriety and industry are preferable to intemperance and idleness, and how much before local prejudice is an enlightened and liberal spirit of enquiry and improvement.

When such shall be the enquiries and such the education of the farmers, then, indeed, will they

be truly the happiest portion of the human family. His farm will be a field of science as well as industry for his children,—a school in which will be found all the elements of useful information; his fireside will be the cheerful and happy resort of intelligent and enlightened friends and neighbors. The rays of mental intelligence would then be shed on the manly and athletic forms of our country youth; they would then lead in society those by whom they are now driven; and direct, by their superior intelligence, those by whom they are now considered as enveloped in degrading darkness. The representatives of our interests in the legislatures would then be composed of men capable of giving a proper direction to the public mind, and our governors would be selected for their superior wisdom and virtue. Such would be the effects of enlightening and enlarging the minds of an agricultural population, and such an influence may be originated and diffused by means of our society. And it is, I hope, in your opinion, entirely within the scope of its design.

Mr. J. B. Lawes on Nitrogenous Manures.

The following letter of Mr. Lawes, the great English chemist and agricultural experimentalist, to the *North British Agriculturist*, on this topic, will, we think, be read with interest:

A short time ago I pointed out in your paper the reasons why it appears probable that nitrogen does not become active as a manure until it has assumed the form of nitric acid. The presence of nitric acid in water draining from the soil is supported by an overwhelming amount of evidence. It is found in the water running from my land, on which no manure containing nitrogen has been applied for nearly forty years, and it is very abundant in water where salts of ammonia, and no other substances containing nitrogen, have been applied to the soil for an equally long period. The sixth report of the "River Pollution Commission," which contains thousands of analyses of water taken from every part of Great Britain, leaves not a shadow of doubt that nitric acid is the ultimate product, whatever may be the form in which nitrogen is applied to the soil. One of the most important elements of plant food is, therefore, always in solution of the soil, moving upwards or downwards in the water, and, unless arrested by vegetation, passing beyond the reach of plants whenever heavy rain saturates the soil or the drains run. Equally important elements of plant food, such as phosphoric acid and potash, although perfectly soluble in water, enter into very insoluble compounds with the soil; and very minute quantities of these substances are found in drainage water. But although insoluble, they still exist in a form in which plants can take them up without difficulty.

In our permanent wheat field we have two experiments side by side; both received potash and phosphoric acid in 1844, and from 1845 to the present time both have received an annual dressing of salts of ammonia, except in 1848 and 1850, when one received a manure containing potash and phosphoric acid. The effect of these mineral manures, applied 30 and 25 years ago, is shown up to the present time by an increase in one crop as compared with the other; and this difference is likely to continue until almost the whole of these substances has been taken up by the crop. Some years ago, a son of the late Baron Liebig asked us to furnish him with samples of the soil of this wheat field, and the result of his analysis established the fact that manures such as phosphoric acid and potash remain in combination with the soil very close to the surface. As all manures are applied either to the surface of the soil, or a few inches below it, we may consider that if they contain potash, phosphoric acid and nitrogen, as is the case with farmyard manures, the two former will remain close to the place where they are deposited, while the nitrogen, as it becomes converted into nitric acid, will diffuse through the soil, where part will be arrested by vegetation, and part will escape into the subsoil and drains.

This fixed condition of one part of the food of plants, and solubility of another, explains why nitrogenous manures are held in such estimation by farmers. They are not only the most active, but the most likely to be deficient in the soil, compared with the more fixed ingredients. I am disposed to think that a careful consideration of the special properties of the various manuring substances, will help to explain several points in which science and practice are not altogether in agreement. One instance of such a difference may be pointed out in an ordinary corn crop. Measured by the amount of manure ingredients removed, which may be called the scientific standard of exhaustion, the corn crop should be the least exhausting of all crops; but practice says otherwise A corn (wheat) crop takes up less nitrogen than any other crop, but is more especially benefited by the application of ammoniacal manures. A root crop takes up much larger quantities of nitrogen than a corn crop, and yet the general opinion is that phosphates rather than ammonia is the manure most adapted for its growth.

In order to explain the difference between these two crops, we must consider their peculiar habits of growth. A corn crop commences actively growing in early spring, just after the winter rains have washed a great portion of the soluble nitrogen out of the soil. Owing to evaporation from the surface of the soil, as well as to the vast quantity of water which plants give off in their growth, comparatively little water passes into the subsoil, and beyond the reach of the plant in summer and autumn. The corn crop avails itself of any nitrogen, or nitric acid, which it finds in the soil, but its active period of growth ceases early in summer. Sometime in June, or generally in July, the changing color of the crop shows that the collecting of food from the soil has ceased. The root crop may be said to commence its active life in July. All the soluble nitric acid which the corn crop could obtain can be taken by this crop; and it can collect, in addition, all that is formed during the summer and autumn months. By arresting the nitrogen, which would other-

wise have been washed away by winter rains, the root crop obtains a supply of soluble nitrogen which was not available for the corn crops, and to this extent it is less dependent on a direct supply of nitrogenous manure than the corn crop. It has often been said that broad leaves, such as the root crops possess, obtain the nitrogen from the atmosphere, but I have no reason to think that such is the case. If, however, a root crop arrests nitric acid which would otherwise be washed out of the soil by the winter rain, it may be said to add fertility to the soil, as if it had absorbed it from the atmosphere.

Dr. Frankland found no nitric acid in the drainage water taken in the month of June from our permanent wheat field, on the flat where no manure containing nitrogen had been applied since 1840; the water taken from the same flat at the end of October, however, contained considerable quantities. As the soil of our permanent root-crop land is more exhausted of its nitrogen than that of the field where permanent corn crops are grown, it is, I think, tolerably evident that it is the soil, and not the atmosphere, which furnishes the root crops with nitrogen. The distinction between the corn and root crops in regard to nitrogen may be explained as follows: Both depend upon a supply of nitrogen in the soil, and both take the supply from near the surface of the soil; a root crop takes more nitrogen from the soil than a corn crop, but it is less dependent upon a direct supply of soluble nitrogen in manure, because it can avail itself not only of the nitric acid which would be formed in the spring and early summer, and which would be equally available for a corn crop, but also of the nitric acid which would be formed in more or less quantities during the summer and autumn months.

The period of time over which some of our crops collect their food is very long; clover, for instance, is sown in spring, and is not ploughed up until about eighteen months afterwards. Some clovers have much deeper roots than others, and experience shows that it is the deeper-rooted plants which are most beneficial to the succeeding crops. Without pretending to say that the distinctive properties of the various crops can be entirely explained by their behavior in reference to these special properties of plant-food, still, the range of their roots, the length of time during which they collect food, and the period of the year in which it is collected, must have a distinct effect upon the results. The saying that "nature abhors a vacuum," was an attempt to explain a fact long before the true explanation was known. Nature's abhorrence of a spot on the earth uncovered with vegetation, and the assiduous provision which she makes to clothe it with plants, must have been observed at a very early period. The true explanation of this process is to be found in the escape of nitric acid, and the arresting of it by living vegetation.

From a piece of old pasture on my farm a crop of hay has been removed every year for twenty-two years—no manure of any sort having been applied to the land during that period; yet the first nine inches of soil contain about 2,000 pounds per acre of nitrogen in some fixed combination—more than would be found over the same area in the adjoining arable land. This amount is quite independent of that which would be contained in the living vegetation of grass and roots. As the time when the land was converted into pasture is not known, we cannot measure the rate at which the amount of nitrogen has accumulated; but the fact I have stated gives some idea of the functions of vegetation in arresting and storing up nitrogen for future use.

J. B. LAWES.

Rothamsted, St. Albans, April 12, 1878.

The Lupine as a Green Manure.

In the very interesting letter from our German correspondent, *Mr. E. Wenig*, among the other means proposed for the renovation of soils as given in the June number, that gentleman alluded to the *Lupine* plant, which had been used successfully in that country as a green manure for this purpose. By comparing Mr. W.'s remarks with what follows, the reader will find that the same recommendation of this plant for a similar purpose was made in the United States Patent Office report for 1861, page 372, by Mr. Louis Schade, of Washington city, from which we make the following extract as to its fertilizing qualities, and the reasons therefor:

"1. The root of the lupine, which contains a large quantity of moisture similar to the turnip, absorbs more energetically than any other plant the phosphate of iron and natural ammonia of the soil,—thus making the latter more digestible and accessible to other plants.

2. It dissolves the chemical constituents of minerals by the evaporation of its roots, which is impossible for other plants; just as the ostrich can dissolve and digest things in his stomach which would be death to any other bird. Thus the surface soil becoms enriched with a humus containing ammonia and a considerable quantity of alkali, phosphate, etc. So great is the effect, that after manuring with the lupine for two or three years *the soil will assume a darker color*. This observation is based upon facts. Even if the plant has been cut and used as fodder, the remaining stubble and root will have a very beneficial effect as manure, though of course it is preferable to plough under the whole plant.

3. What has been said about the root applies equally to the plant. It has the capability to absorb, in an increased measure, nitrogen and carbon out of the atmosphere, and does not draw upon the humus for its development and growth, as is the case with other manure plants. The lupine communicates its oxygen as ozone, forming thereby in the air which surrounds it ammonia containing nitric acid, something which partly benefits the lupine itself, partly the soil, and also the plants growing in the immediate vicinity and needing manure."

Prof. J. P. Stelle, who has charge of the agricultural department of the Mobile *Register*, gives a description of a plant, which he finds

to be in every respect very much like the *Lupinas angustifolius* alluded to above by Mr. Schade, which he says is most extensively used in Europe as a green manure. He adds:

"We do not hesitate a moment to give it as our candid opinion that the *Lupinus villosus*, so common on our poor sandy lands, is one of the most valuable plants that we could cultivate as a green manure. In all probability it is better than either clover or peas, neither of which can be made to grow where the lupine will grow—on our entirely poorest lands. So strong is our faith in the lupine that we are now gathering seeds for the purpose of sowing it this fall on several acres of land. The present is the very nick of time for gathering—a week or so later and they will be all shelled out and gone. We hope some of our friends will try the experiment. Seed should be sown at about the beginning of the fall rains. We shall sow thickly at broadcast.

In Europe the lupine is grown as a forage plant as well as for green manuring, and also as an oil plant, the seeds yielding a useful oil. Our lupine might be made to figure in the same direction, most likely. In its wild state, cattle eat it with commendable relish, and sheep like it well. Cultivated upon better land than it usually finds in the woods, might so change its nature as to render it a most valuable feed for stock. Let us give it a trial."

The following is the description of the plant as given by Prof. Stelle:

"There are three species of lupine growing wild in the Southern States,—*Lupinus villosus, Lupinus diffusus and Lupinus perennis.* The species first named is the most common, perhaps. It grows in great abundance on the low sandy ridges of the Gulf Coast country, where it is usually known by the common name of Indian Mullein. Throughout the winter it is a very conspicuous plant, being an evergreen with broad, thick and soft-downy, oval-shaped leaves, growing from one to two feet in height; or rather, in length, for it seldom stands entirely erect. Its color is light green and it grows in bunches; that is, a single plant branches off into many parts, the stems being about the size of a large goose quill, and all, like the leaves, covered with a soft down. Early in spring, say in April, it comes into bloom, and then it is one of the most conspicious objects of the regions in which it abounds, being literally covered with long spikes of bluish flowers, the spikes standing erect above the leaves. The fruit that follows the flowers is a wooly pea-like pod which contains several very pretty little pea-like seeds of a brownish color marked with black. Seeds ripen from the middle to the last of June, when the pods fly open and let them out upon the ground to get under cover as best they can for the next crop. Such seeds as secure a covering in the soil germinate in the fall and stand as delicate plants throughout the winter. Next summer they make a good growth, and through the next winter are the mature plants already mentioned. They come into bloom and fruit the next season and then die, the plant being what is known as a *biennial:* that is, a plant that lives two years from the seed, and no longer.

"A careful study of this lupine has satisfied us that it deserves to rank well up among our most useful plants. It is strictly an 'air feeder,' sustaining itself and making a rank growth upon our poorest piney woods sandy-soil that could not possibly yield the elements necessary for the development of the tenth part of such a growth as it attains to."

Home-Made Super-phosphates.

Prof. Caldwell, of the Agricultural Faculty of Cornell University, who says he does not wish to be understood as recommending the home manufacture of this fertilizer, on account of the disagreeableness to say nothing of the danger of the process, and because the manufacturer can make it more cheaply than it can be made by private hands, gives, however, the following directions:

Muriatic acid cannot be advantageously used in making super-phosphate; one of the products of the action of the acid on the bone-phosphate would be chloride of calcium; this substance absorbs water very eagerly from the atmosphere, and, just as this same substance in poor salt may cause it to become damp in the air, so it will keep the super-phosphate damp. All concentrated fertilizers should be presented in the form of a moderately dry powder, so that they can be spread evenly and uniformly.

For making super-phosphate with oil of vitriol, or with any acid, the bones must first be ground, for it is not easy to reduce whole bones. The quality of the super-phosphate made depends, of course, on the quality of the bone dust used, and also on the proportion of acid added to it. From 50 to 60 pounds of acid for 100 of bone-dust should make a manure of excellent quality. The mixture may be made in any tight wooden cask.

After weighing out the bone and the acid, put into the cask a quantity of water about equal in bulk to that of the acid to be used, and then add the acid in a slow stream with constant stirring, and finally stir in the bone-dust. The mass will foam up, and therefore the capacity of the vessel should be considerably greater than the bulk of the materials used. If bone-dust is used, and no more water than is given above, the mixture will become tolerably dry without the addition of any dry powder, like plaster, to take up the excess of moisture; if coarse ground bone is used, more water must be taken, more time will be required for the action of the acid, and a dryer must be added. The oil of vitriol must be handled with great care; it must not be allowed to come in contact with hands or clothes, nor with any metal except lead. And in its concentrated state as it comes in the glass carboys it must not come in contact with wood.

The Talbot Co. (Md.) Agricultural Society will hold its fair on Sept. 11, 12, 13, at Hambleton Park.

The Washington Co. (Md.) Fair will be held Oct. 16, 17, 18.

Cultivation of Wheat.

The *N. Y. Tribune*, in its agricultural department, having doubted the statements as to the result of the cultivation of wheat by Mr. Groff, of Lancaster Co., Pa., ("60 bushels of wheat per acre, by sowing in rows 11 inches apart, and tilling with a cultivator,") the *Lancaster Farmer*, in which the reports of Mr. Groff's cropping were originally published, thus takes up the question as to the reliability of the grower:

"If the *Tribune* had made the enquiry, it might have learned that Mr. Levi W. Groff's location in our county is by no means "indefinite," and that he resides in the old family mansion and on the very farm first located by the celebrated Hans Groff, in West Earl (then Earl) township, Lancaster county. Mr. Groff's farm is located about one and a half miles northeast from Bareville, which is his nearest post-town."

The Farmer adds, that Mr. Groff and his son have been engaged in the cultivation of wheat for some years, and last year it is believed that by cultivation alone they brought the yield to more than double the yield of the average crop of the county of Lancaster, and says: "It is not pretended that the cultivation of wheat is yet a fixed system beyond any peradventure, but the results thus far have proved it a successful experiment. In a season when, through favorable circumstances, the crops are universally good, the benefits resulting from cultivation may not be so apparent as they are in seasons more unfriendly, and when, through the manipulations of the soil, the growth of wheat, as the growth of any other species of vegetation, may be stimulated and strengthened by cultivation. If we were to put corn, potatoes, beans, cabbages or tomatoes into the ground, cover them with a little earth, and then let them take care of themselves, as is usually done with wheat, we should gather a very unsatisfactory crop; but through cultivation we cause them to perfect themselves and yield abundantly. It is difficult to determine by what known law in vegetable physiology, wheat, or any other cereal, should be deemed a special exception.

Whilst on the subject we will here add the result of a visit to Mr. Groff's farm, by certain farmers of Berks Co., Pa., which is published in the Reading *Eagle:*

Ezra Z. Griesemer and Solomon Deturck, two Oley farmers, have just returned from a trip to Lancaster county, whither they went to look into the plan of cultivating wheat. The wheat is sown in rows four inches in width and eleven inches apart, giving sufficient room to run the cultivator through in the spring of the year, very much like hoe-harrowing corn. The cultivator is a simple arrangement which is attached to the drill and worked by two horses, who walk between the rows of wheat. The wheat is worked in this way just as soon as the frost leaves the ground and afterwards about the 20th of April again, when the clover and timothy are sown. The results of this new plan of cultivating wheat were 61 bushels and 15 pounds to the acre last year, and the promise the coming harvest is in every respect as bright. The straw is 6 to 6 feet 1 inch high, and the heads of wheat from 4 to 4½ inches in length. Mr. Griesemer thinks that without any exaggeration the yield of wheat will be forty-five bushels to the acre. The clover and timothy are also mentioned as very fine, being much better than when sown under the present way. The farm visited by Messrs. Griesemer and Deturck is owned and worked by Levi W. Groff, near Bareville.

The editor of *The Practical Farmer* has also visited the farm of Mr. Groff, and reports the following as the result of his observation:

Last week, while travelling through Lancaster Co., Pa., we made it a point to visit the farm of Levi W. Groff, near Bareville, in that county. Mr. Groff has been experimenting on the cultivation of wheat, and last year his experiments were so satisfactory (resulting in double the yield heretofore,) that this year he has put in thirty acres of wheat, and has it in the highest state of cultivation, having worked it through three times this spring; does not work it in the fall. In cultivating the wheat, Mr. Groff uses a wheat drill six feet between the wheels, and with four sowing tubes instead of eight. Each tube is so arranged with a spreader at the bottom of it as to put the seed in regular rows four inches wide, with nearly eleven inches of space between the rows. The distance between the outside tube and the wheel is the same as between the tubes. This leaves the space between the rows wide enough apart for the horses to walk between them without treading down the wheat. In using the drill for cultivation, the drilling tubes are removed and the three-clawed cultivating hoes are attached—being the same distance apart as the drilling tubes. The claws of the cultivating attachment are in triangular groups, the center one in advance of the two outer ones, which prevents clogging, leaving the ground even and clean. Protectors are also fastened on to prevent the wheat from being covered up by the dirt as it is thrown up by the claws, and they do the work perfectly. We witnessed the operating of the cultivator, and examined its work closely. It leaves the ground fresh, loose and mellow, instead of beaten compactly by the spring rains. The whole thirty acres presented a delightful and pleasing appearance. The wheat looked vigorous, uniform in height, firmly set, rich in color, having that peculiar shade of green which indicates a healthy state of the plant.

We closely compared it with adjoining fields on other farms having equally as good soil, equally enriched with fertilizers, and as well put in, but put in with the common drill. It really would not admit of comparison. There was a difference of almost one-half in favor of the cultivated wheat. Mr. Groff informed us that last year he raised 61 bushels per acre by his mode of cultivation, being about double the usual yield on that land. The straw is heavier and much less liable to lodge, and the heads and grain grow much larger. A good crop of clover hay had been taken off last fall after the wheat had been harvested, which shows that it does not interfere with the sowing of clover and timothy in the spring; and as good clover we never saw

as we did on this farm, following last year's cultivation.

If we were to judge the yield of wheat from the present appearance, we would say that Mr. Groff will be paid many times over for the small amount of extra labor required in cultivation.

The Washing Away of Plant-food.

Messrs. Editors American Farmer:

Your intelligent correspondent, Nansemond, in your last January issue says my contribution of December suggests some views not entirely in accord with his, and proceeds to handle what I said, as well as what I did not say, in such a way as to create erroneous impressions. I do not think he intended to misquote me, but only misunderstood me, and his quotation partakes of his misconception; but the fact and influence is all the same, whatever the intent. He agrees with me, in one part of his polite criticism,—that there can be no doubt of the depletion of soils by the "physical power of currents of water," the remedy for which, he admits, was very properly stated by me, to be level cultivation and avoidance of deep furrows.

To one whose style, so far from luring adherents, oft deters, even those who believe the truth, from embracing the garb in which it is presented, this endorsement is exceedingly gratifying.

But in another place, in reference to the destructive force of water, he turns round, and appears to view it in another light, or from a higher stand-point,—as where he says: "No, no, the God of nature * * * has not placed this burden on the blessed and refreshing rains, which bring life, health and nourishment to our crops, at the same time stealing (as it were) the life-blood from the soil by the *physical power of rushing currents of water.*" All this is quite forcible, and perhaps more commendatory than heartless one-sided criticism. Cogent arguments on both sides of a subject, even from the same writers in the same discourse, are not without precedent, and have the merit at least of diffusing light on all sides; but iron-hearted critics, rarely softened by eloquent appeals, may insist that the procedure, however it may enlighten us, or elevate our views of the ways of Providence, leaves the *question* unsettled.

I am quoted, in substance correctly, as saying that heavy rainfalls cause plant-food to run off of plowed fields more rapidly than a hundred men can restore it. Although said by way of illustration, merely incident to the subject, it is not for me to complain of its being considered a material statement. Viewed as such, it is true or false, however little its correctness may affect the *question* of discussion. As, however, it was thought of sufficient importance to quote and remark on, and actually created doubts, in my reviewer's mind, whether I had not "to some extent lost sight" of an old discovery of supreme importance, I may complain that he neither admits nor denies it. Had he denied it he might have put me to the proof of the correctness of an incidental illustration, which, though as clearly true, is as difficult of argumentative proof, as that a book is a book.

But without the venture of an issue, he puts me to the rack, argues against it in a way to provoke others, more bold, to make the issue—and queries as to whether I have not, to some extent, lost sight of some long-since discovered property, described as the "innate or God-given power of the soil to absorb and store away within its pores the salts, gases and essences of manureal substances," which he says I as "a *decided* bearing on the question."

Further on, he says my remark that, in general, plant-food is lost neither by sinking nor evaporation, is very true, and he adds, "nor is washed away on our level lands, nor is the ammonia, phosphate of lime and other salts dissolved out by the rains," &c.,—and further on *argues* it against the decrees of God, that they should be washed away by the force of rushing currents of water. Then pray how is the plant-food lost?

In his enthusiasm over the "wonderful absorbing and retaining power of the soil, discovered (by Davy) many years ago," but unfortunately not much discovered now, he seems to deny or ignore all assigned causes except that other wonderful and equally ancient discovery, by the chemists, of its *exportation in the crops*, which he fails to mention.

By the argument of the *absorbing and retaining* power of the soil, having, it seems about wiped out all the ways suggested by the astute Farmers' Club, and myself, and shown so clearly by what means it is retained in the pores, and why and how it does *not* escape, we are at a still greater loss to know how it *escapes*, or, indeed, whether at all, and if at all, whether it is not a reflection on divine Providence, to allude to its being washed away, by the "life-giving rains."

To the learned scientists, who, by analyses of crops, discover and foretell, by their constituents, what is required to be restored, without any analysis of the drains, the floods, or the lost soil, in the ocean—the sinking or the evaporation,—all opposition on my part, would seem hopeless and presumptuous, whether their wonderful acumen be referred to the spirit of prophesy or of sorcery. I will venture, however, to say that for the purpose of ascertaining the quantity of plant-food lost, and to be restored to perpetuate fertility, the learned gentlemen who present tables of analyses of crops or discoveries of retentive powers of the soil as the basis, would enlighten us as much, if instead of a bushel of grain or earth they should analyze a bushel of pigs, as the basis of calculation. This is equally absurd, but less dangerous than the former, because, by parity of reasoning, even a farmer might detect its fallacy, and include in the basis other animals sold off, or possibly soils *swept away by the floods*, while the school-man's theory possesses no inherent reminder, to the plain farmer, of additional sources and means of loss, but carefully excludes them, by leaving them out of the calculation; as Prof. Dana figures three-eighths of one per cent. of lime inexhaustible by seven thousand four hundred years of cropping; and sagely informs us of a law, by which if it were possible to exhaust the lime, the plants would convert potash, soda and magnesia into lime, or grow without lime.

The members of the distinguished Club think some of the manure sinks and some flies away,

while I think some is sold, some sinks, some flies, and a far greater portion *runs* away. My reviewer is not clear, as to his opinions, except on the *retentive* properties of the soil; for he gives us nothing in place of what he wipes out.

If this be the turn the argument is to take, we may next fear the advent of a new philosophy, urging the efforts and tendency of nature to recover, against the use of curative agencies, while life ebbs away, under the ravages of unchecked disease.

My reviewer, however, says—"Certain general principles may be stated, deduced from scientific knowledge of the nature of soils, crops and manures," (but fails to state them) "from which correct practice, based on experience of practical men, such as compose the Gunpowder Club, may be formulated."

My reviewer fails to *formulate*, and does not say, square up, that he agrees with, or dissents from, their expressed views: then who is to formulate to meet his approbation?

The Club have formulated it into sinking or evaporation; the chemists, into selling away the products; while I ascribed the loss to all these causes, combined, with the far more destructive agency of rains and floods;—and still my reviewer, who fails to formulate at all, is unsatisfied, and suggests another formulary, "based on the experience of practical men."

But when my theory, based on my own knowledge and practice, and facts plain to the "wayfaring man, though a fool," is wiped out by a scrap of theological speculation, I decline to build anew, under the direction of one who demolished the old, preferring that he should build as he destroys—and time, the impartial judge, decide on the skill and permanence of the rival structures.

But my reviewer may have intended his explanations of the absorbing and retaining power of the soil, and his array of the beneficence of the Almighty, against my washing theory, as a formulary of his views. But it seems to me rather a negative theory, or argument against the fact, probability, or possibility, or the divine sanction, of exhaustion at all.

In addition to his remarks already referred to, pointing in this direction, he says, there is recuperative energy in a soil under rest and good treatment by which it recovers strength from depletion of crop-bearing." Again, he says: "But for this wonderful absorbing and retaining power of the soil, the earth would not be a fit habitation for man or beast," &c. Again, in reference to my suggestion that nine-tenths of the *lost plant-food*, (not nine-tenths of the plant-food *of the soil*, as he makes me say,) is swept away by rains, he says "It cannot be possible that this is so, else the fruitful soils of our country would long since have been barren," &c.

Yet I fail to perceive how the fact, that nine-tenths, or all the *loss resulting from rains*, would prove more woful than the same loss from *other causes*. Again, he urges "we must take into consideration the absorbing and retaining character of the soil," &c. My critic having called special attention to what purports to be a quotation from me, but which I never wrote or said, as a specimen of *his* logic, I may advert again to what *he did* say, in reference to my opinion that nine-tenths *of the loss* results from rains,—"No, no, the God of nature * * has not placed this burden on the blessed and refreshing rains," &c.

Under ordinary circumstances the devout style, to say nothing of the eloquence of this argument, should enjoy immunity, but it strikes at the heart of that theory which I, alone, defend, and turns the fairest fruits of my labors to ashes on the winds. So, it sweeps away all other theories I have ever heard or read.

The scientist who spurned the simple story of the formation of man's physical body of dust, because it appeared miraculous, until by analysis he found it so made to-day, and who failed to comprehend the existence of a special Creator, because He is not a *creature* within the power of his chemical manipulations to imitate, in his enthusiasm over the discovery that plants, as well as man, are made of earth and air, tells us the plants steal all the manure to build their useless bodies; nay some deprecate the waste of placing soluble food within their reach, but they turn it all into plants, ere a life-time of labor is expended in its conversion. Under the ægis of Nansemond's logic, I shall have little trouble in exploding this theory, for surely "nature has not placed this burden on the life-giving plants." The Club suppose the manure sinks or evaporates; but surely this burden has not been placed on the sub-soil, or the life-giving air; so, away goes this theory of the eminently practical Club. Then who shall stand against Davy's discovery, and theological deductions?

One of the difficulties in the way of arguments against fact, is the tendency to prove too little or too much.

My reviewer's argument not only disproves my theory and all others on the subject, but is equally fatal to the truth of the sacred account that the God of nature *did* place this "burden" on the life-giving rains, not only to "steal, as it were," the life-blood of the soil, but of the inhabitants of the whole earth, engulphing all but one family, spared in the ark, to tell the story, and start again the race of life. So his logic is equally fatal to the truth of the modern profane history of 1870 and 1877, when, we are told, that the "physical power of rushing currents," not only stole the life-blood of the soil, but carried thousands of acres of the soil itself on the way to the sea, sweeping crops, barns, cattle, and families, trailing wide streaks of ruin through the fairest portions of our valleys.

So it appears if I have lost sight of the absorbing and retaining power of the soil discovered many years ago, he has overlooked the absorbing and retaining power of *water*, discovered many centuries ago by all mankind, and apparent every day.

He says the power of the soil in removing ammonia and other salts from solution in water establishes "positively the scientific principles on which we are to act in the intelligent application of manures."

Yet it would seem that the power of *water* to *remove* ammonia, &c., from the soil might enter into the principles. Then again that "innate or God-given power of the soil to absorb and store away in its pores the salts, gases, and essences, of manureal substances," that he thinks has a "decided and important bearing on this

question," and of which he fears I have lost sight, I confess I am looking at the other side,—the power of water to *wash out*, and not that of the soil to *retain*. I have little concern for ammonia held, and much for that which is liable to wash out; to restrain washing, and restore what goes in spite of the best husbandry.

I confess I do not appreciate the quantity of plant-food stored in the "pores" nor the importance, or possibility of retaining gases in the pores, nor understand how gases, or even solid matters, in the interstices, can have so "decided and important bearing" on the question of loss by currents of water, or on the mode of applying manures.

But I *do* understand that phosphoric acid and potash usually form combinations, (insoluble to rain-water,) with the more abundant constituents of the soil, and thus become merged, assimilated, so as to constitute a part of the soil.

I understand, also, that nitrogen, like phosphoric acid and potash, combines with the body of the soil, but unlike them, in general, forms soluble combinations, easily washed out.

Mr. Laws' experiments prove, not only that nitrogen is in no way "stored" or secured in the pores, or even by reunion with matters of the soil, to resist the force of "currents of water," but that it is *dissolved by the waters of the soil, sinks in the drains, and washes away forever*.

The drainage water was found to contain ten times as much nitrogen, as the rain-water falling on the soil. Here we find in fact the "life-giving rains stealing, as it were," from the soil ten times more nitrogen, than they brought, to say nothing of the probably larger quantity swept from the surface, of which no account was taken. The drainage water from plots to which large quantities of ammonia or nitric acid was applied, was found to contain four times as much nitrogen as the water from plots manured with other substances.

One of the benefits of irrigation is the nitrogen dissolved and carried from earth through which the water passes, on the way to the fields.

But I am made to say, by what purports to be a quotation, that "more than nine-tenths *of the plant-food of the soil*" is washed away. Never having examined the subject of the relative proportion lost from, and retained in, the soil, I have never expressed an opinion about it. Assuming that some is lost, I have tried to investigate the causes, and the relative proportion of *loss*, referable to the several known causes, as indicating the measure of effort, and the *means* necessary to counteract or ameliorate the action of each. With this view I called special attention to that cause, so generally overlooked, which I believe occasions more than nine-tenths *of the loss*.

For aught I know, or said, this nine-tenths *of the loss* may be less than one millionth "of the plant-food of the soil." What I did say appears on pages 395-6-7, December, 1877, issue of the FARMER, which is the highest and only admissible evidence.

But suppose I had said what he alleges, and I deny—does his argument disprove it, any more than it refutes the ways of Providence, and the force of water ever since the creation?

I shall never be ashamed to announce the truth, however few believe it.

The most serious allegation against me is the propagation of an opinion in which few farmers will agree with me. Of this I am guilty and must abide the consequences.

This allegation may bear fruit, in deterring others from believing; but if intended to deter me, it is unavailing; for I was aware that very few agreed with me—and for that very reason published my opinion. If other reasons impelled me, I should be ashamed to own it. Had I known it was the prevailing opinion, I might have been justly chargeable with the real offense of converting your pages into an arena for superfluous exhibition—amounting to an advertisement that I, even I, stood cheek by jole in the ruts, with the majority.

But if the dissent of farmers is referred to as testimony, or argument, to prove error in the propagator of rejected opinions—to say nothing of the fact that its prevalence would arrest all progress, except the waste of the soil, seal the doom of science, and fix the farmer in the ruts of ages—it is well for mankind it was unknown or impotent among the school-men of eighteen centuries ago, for armed with such a weapon, they would have buried the truth of the miraculous story of a dozen fishermen, concerning the carpenter's Son, in the grave of its authors, who gave their lives to its propagation, against the opinion of all mankind. L. H. MCGINNIS.

Louisville, Ky., May 22, 1878.

The Enterprise Club.

Editors American Farmer:

June 15th was one of the few bright summer-like days we have had this season; and as harvest has begun, there were only eleven members at P. G. Stabler's. Our guests were Charles Stabler, Warwick Stabler and Geo. L. Stabler. Robert M. Stabler presided and conducted us over the premises. The dwelling-house is neat and well built; the grounds around it are nicely kept, the ornamental and shade trees being very beautiful, and they were all planted by our worthy host.

Among the outbuildings we noticed a smith's and carpenter's shop in close and convenient proximity, both neatly trimmed with an ornamental cornice, whitewashed, and a honeysuckle was tastefully arched over the doorways. Our friend has his shoeing and most of his other smithing done at home, and, being a natural mechanic himself, he finds a good deal to do at odd times in these shops.

The hen-house and chicken-yard are constructed on the most approved plan, and are very successful, as the result (about three hundred healthy young chickens of all sizes) abundantly proves; but we believe there is much more of this success due to the attention regularly and constantly given by our hostess than to the pattern of the hen-house or the height of the pales that enclose the yard.

Some fine cows with very large udders were being milked in the barn-yard; among them were several high-grade Jerseys. There was being unloaded into the mow some new-mown

hay very bright and sweet. We saw a fine field of clover and timothy mixed, the clover in full bloom and the timothy just coming into that condition. Our host asked if he should cut this field for hay the coming week, or leave it until after wheat harvest. This question gave rise to a lively discussion after we returned to the house, which resulted in a tie vote. Some of our most successful and thrifty farmers advocated leaving the grass longer, as the timothy would grow more and it would be easier to cure when both grasses became more mature. The dairy farmers thought as it was intended to be fed at home to milch cows, it would be far better to cut it now while the juices were in the stalk, when its strength and flavor would be preserved, than to run the risk of leaving it until after wheat harvest, when a press of work is sure to be upon us; corn and potatoes need work and the grain ought to be hauled in immediately. Ten chances to one the clover would be parched up before the keen edge of the mower could be brought into execution, and what was gained in quantity would have deteriorated vastly in quality.

Our essayist failed to come to time, but as he is prompt in everything else we must excuse him; the subject, however, was fully discussed, and Asa M. Stabler gave an unofficial report of the success and working of creameries in Carroll Co. The result of the discussion may be the establishment of a butter and cheese factory in our midst; certainly we were much encouraged to that end by the report from Carroll.

G. Farquhar asked what was the best plow for two or three horses. In answer thereto, Chas. Stabler said he did not know of any plow that would work equally well for two or three horses. He prefers Minor & Horton 22 for three horses, and two horses; he uses a wheel on both and sword-coulter for sod; he sets the coulter a half inch further in to the furrow than the cast cutter on the share; by this means the sod is all hidden at the seams in plowing. T. J. Lea spoke favorably of a chilled-iron plow made in Syracuse; it had been very satisfactory to him, the share lasting three times as long as ordinary castings. E. P. Thomas spoke of the Oliver plow made at South Bend, Ind.; being chilled the plow scours nicely in light ground, wears well, can be adjusted for three or two horses at pleasure, as the beam can be moved to the right or left in a few seconds. Asa M. Stabler said for three horses he had not seen any plow he liked better than the Taylor plow; it had weight, which was needed if plowing hard or stony land. He also remarked that he would do all in his power as Vice-President of the County Agricultural Society to get up a plowing match for the next fair..

When members of the Enterprise Club get together they talk so much, and so earnestly, and so late, that it would bother a more experienced reporter than myself to note a tithe of what is said, and I will hold myself fortunate if I once in a while catch one or two items that will interest the readers of the *American Farmer*.

Sandy Spring, June 17, 1878. N. E. D.

Mr. A. M. Fulford, of Bel Air, recently sold a pair of his Berkshires to be sent to Cuba.

The Deer Creek Farmers' Club.

This association held its June meeting at the residence of Mr. John Moores, near Belair, whose farm and stock were examined by the usual inspecting committee, who reported favorably upon their condition. The subject for discussion, as previously appointed, was "Straw," and from the *Ægis* we take the following report:

On the Use and Value of Straw.

John Moores said we would all like to know what to do with wheat straw. As a feed he pronounced it worthless—so much so that he would be willing to give $5 a pound for all the meat put on a bullock fed on well-threshed wheat straw and nothing else. A small portion of the straw can be used in the barn-yard as an absorbent, but he uses leaves in his barn-yard, and spreads his straw from the threshing machine in July, on his pasture field or on the field he intends for corn the following year. It must not be spread too thick, so as to kill the grass. Has seen an excellent sod formed that way where there was no grass before. Very little bone had ever been applied to the land, and a dressing of lime 35 years ago. Has known it to add at least four barrels of corn to the acre. Grass never suffers from drought when thus mulched with straw. Two tons of straw to the acre would be a fair dressing. You will see the benefit in three weeks afterwards. It is useless to throw much of it in the barn-yard. Don't feed it. You rob the straw of its chief value for the land, and then you rob the cattle by feeding it to them.

Mr. Allen agreed that Mr. Moores' plan was a good one, but thought cattle relish straw, and that it would do them good.

Mr. Moores suggested that clover-hay would do them more good.

James Lee said he used straw for bedding during the winter and never has any spread out.—He don't feed any of it, but thought if cattle are running out and feed on fodder, it would be better to have straw in a rack for them to run to.

R. Harris Archer agreed with Mr. Moores, and said the best thing to do with it is to put it back on the same quantity of land from which it was taken. It is worth in this way $5 an acre. A very small quantity of straw will serve for bedding through the winter, if housed and kept dry. Don't put any straw out in the weather except what is spread on the fields. Straw is a great fertilizer.

George R. Glasgow generally ricks his straw and would like to have a rick in every field. Cattle will leave the best clover or natural grass and go to a straw rick. It will prevent them from purging when turned out on young grass in the spring. If he spread straw would prefer to spread it in the winter; then it would not smother the grass. No doubt it helps the land.

E. M. Allen said he had seen great advantage from spreading straw, and thought it strange that it was so much neglected. No common thing should be allowed to prevent it. Mr. Allen also said he would like to impress upon farmers the importance of sowing their corn-fields with clover and plowing it under for wheat. By this means they could enrich their lands at less ex-

pense than in any other way. Sow the seed before the last cultivation and work the seed in.—Clover will come up from a greater depth than most people imagine.

Geo. E. Silver suggested that it might be better to let it stand two or three years to let it get good roots.

Other members thought clover would not take in corn one year in five. Last fall was an exceptional one.

James H. Ball thought straw was of considerable use in helping to fill up cattle, even if it did not make much beef. He had seen cattle wintered on straw and perhaps a little meal and they looked well in the spring. Straw is a good fertilizer—not because it shades the ground, for the sun was intended to shine upon the face of the earth.

S. M. Lee agreed in the main with Mr. Moores, that there is little nutriment in straw and it is poor economy to force stock to eat it. They might pick a little at their will, to advantage.—He regarded it as very valuable, however, as an absorbent of liquids in the stable, which are as valuable a fertilizer as the solid excrements.

Henry S. Gorrell also agreed with Mr. Moores as to the importance of spreading straw. It will go a great deal further by using it directly from the machine than if allowed to get wet. Last spring he had but little manure and spread some straw on the field he planted in corn. The difference in its favor was perceptible all the season, and it increased the yield at least three barrels to the acre. It ought to be applied as far ahead of the crop it is intended to benefit as possible.

Dr. W. W. Hopkins enquired the commercial value of straw used as indicated, when compared with artificial manures. Mr. Moores thought it worth $10 a ton to spread on grass.

Wm. Munnikhuysen said he had spread a great deal of straw and had seen as much benefit from it as from anything he ever used. Last September he spread some and believes his corn is better there than where Phosphate was used. Four weeks ago he hauled some on a pasture field and the grass has nearly hid it already.

R. John Rodgers coincided generally with Mr. Moores Cattle will eat it and it will do them no harm. Likes to use plenty of it for bedding. Has seen astonishing results from spreading it on land. It is of great benefit on hard clayey places, as it has a tendency to lighten the land. In plowing land where straw has been applied you will find it more mellow than elsewhere. He would give cattle all they are inclined to eat, but never could get his cattle to eat much of it. He admitted that he had never had a stack of clover they would not eat. It is very injudicious to allow straw to lie in the rack and rot down. It ought to be hauled out and spread on grass.

S. M. Bayless had never found straw of much advantage to cattle. They will not eat enough of it to do them any good. It is a great thing to spread on land. The best place to put it is on an old pasture field.

Thomas A. Hays said he had no experience in spreading it on land, but intended to follow Mr. Moores' plan.

Mr. Ball inquired if it would not be better to return the straw to young grass on the field from which it came. Mr. Moores replied that it might interfere with mowing if the field was to be mowed.

Mr. Moores said his attention had first been called to the value of straw as a mulch and fertilizer in 1853, when he had spread a quantity of straw on grass to get rid of it. His neighbors told him he had ruined his grass, but it made an excellent sod that remains to this day. Nothing else has been applied to it.

Silas Silver remarked that if he had more straw than he needed for litter he would spread it on grass. Early grass when shaded will spring up and grow more rapidly than where not shaded. Straw plowed under for corn will make it ear well. At the time the corn is earing the straw will be decaying and furnish a fertilizer for the corn. Has not succeeded in getting cattle to eat much straw.

George E. Silver thought straw not a profitable feed for stock, but was best used as an absorbent and top-dressing for grass. It will retain moisture under it and lighten up the soil.

Johns H. Janney, (the President,) said he had noticed where he had put straw to kill Sodom apple the corn was twice as high as any other place in the field.

Adjourned to meet at R. John Rodgers' on the 20th of July next, when the question for discussion will be "What crop should wheat follow?"

[For the American Farmer.]

On the Culture of Tobacco.—No. VI.

The Assorting of Tobacco—Does it Pay?

That it is necessary and proper to assort and classify tobacco I presume no one acquainted with the article will deny. Diversity of quality and value, order and convenience, as well as the rules and regulations of trade and commerce, require it. All goods, wares and merchandise for similar reasons are classified. The laws and well-being of society demand that men be classified according to race, color, talent, education, morals, and other minor differences. But these are not the considerations that will influence and induce the planter to assort and classify his tobacco. The question with him is, will it pay; or, in other words, will he be compensated for doing this work when his tobacco is sold in market. Are the buyers of tobacco now doing this? I regret to have to say I do not believe there is one, except in part; and here we find one of the principal reasons why there is so much mixed tobacco on the market. The assorting of tobacco is a separate, tedious and costly item of labor which only the best judges of it can perform, and the planter cannot afford to do or have it done unless he is recompensed for the labor.

When the purchasers of leaf tobacco give evidence of a purpose to do this, the work will be done and not before; and the trade might as well be assured of this now as at any future time.

Still a thing that is so necessary, so right and proper, must in time so commend itself to the favor of all discreet men engaged in the tobacco trade as ultimately to induce them to pay a fair

compensation to the planter for doing this work, and thus it will finally become the prevailing custom with them, when our tobacco will regain its former high but now impaired reputation in foreign markets, because of its mixed qualities in the same hogsheads and tierces. In view of this change I now proceed to give such directions as I am capable of giving for properly

Assorting and Classing Tobacco.

There will sometimes be variations of color in tobacco after it is cured, though it was grown upon soil of the same texture and was of uniform color when cut, and was cured at the same time and in the same house,—owing to the fact that some portions of it in the house being more exposed to currents of air will cure more hastily than other portions. These slight differences arising from such cause need not be regarded when assorting, as they will soon disappear,—there being always in such a case a tendency to assimilate to that sameness of color which was obvious in the crop when growing and at maturity. Variations in the textures and fertility of the soil in the same crop or in the same piece of land will cause a difference in the color and size of the tobacco at maturity. These differences suggest the advantages of assorting tobacco when it is cut and housed by keeping the different qualities as indicated by size, color, &c., separate as far as practicable, and housing the respective qualities in different houses. In this way much confusion and labor will be saved when assorting it to strip, and also when classing it to prize into hogsheads for market.

The stalks of tobacco should be thoroughly cured before it is taken down, and placed in bulks to strip. The order when taken down should be pliant, but not too soft. When taken off the sticks it should be placed in broad bulks 4 to 6 lengths wide, lapping the but ends upon the leaf ends, putting on the layers with regularity and keeping it straight. By thus placing it in bulk the order will continue soft and the stripping may be done in a close, warm house, during any weather.

No quality of manufacturing or stemming tobacco should be kneed when placed in bulk to strip, nor at any time, for any purpose, until it is packed in the hogsheads to prize for market,—because such packing causes the leaves to adhere together and retards the work of assorting when it is stripped and also the work when closing it to prize, and does not in any way improve its appearance, but in some respects is injurious. The case is different with shipping qualities for export, which require hogsheads of heavy weight and very smooth packing and prizing. Tobacco should first be assorted, then stripped. The number of hands employed to assort should be apportioned to the number of strippers, so as to keep them supplied with the assorted article and leave none of the assorted tobacco unstripped at night, when all of the tobacco stripped during the day should be placed in bulk, straight, by lapping the ends of the leaves and without middle courses, so as to leave the heads of the bundles exposed. The assorting is done by breaking off the bottom or lug and other inferior leaves, if there are any on the plant, and keeping them separate. Such leaves in a good and well-managed crop will be less than an average of two leaves to each stalk. These are called lugs, and should be tied in bundles of 10 or 12 leaves. The plant stripped of these leaves should be passed to the strippers. The strippers should strip off the remaining leaves, whether 4, 5, 6, 7 or 8 in number, and tie the same in a bundle, always tying a plant in a bundle, and never putting the leaves from different plants in the same bundle, except in cases where there is less than 4 found on the stalk, and always tying the bundle with the bottom or the most inferior leaf left on the stalk by the assorters. By this method only two kinds are made of the tobacco when it is stripped, known as leaf of all lengths and of varied color, and lugs. Preparatory to prizing the leaf should be *classed by the bundle, according to length and color*, and prized into separate hogsheads or tierces respectively.

I do not think that very exact or critical assorting is necessary except in the case of wrappers. A difference of 5 to 7 inches in the length of manufacturing or stemming qualities, if the color is uniform, is not objectionable, and the prizing of it in the same hogshead or packages will not reduce the price. All kinds of wrapping tobacco, whether black, red, dapple or fancy bright, should be critically assorted to bring the best prices of its kind.

Eight to eleven-hundred pounds is about the right quantity of manufacturing or stemming qualities of tobacco to prize into each hogshead. Shipping qualities for export should be made heavy. Wrapping qualities should be put up in tierces of 500 pounds or in lesser quantities and *very tightly prized*. The order in which tobacco is prized depends upon its quality and the time of the year when it is sold. Stemming qualities should be prized in pliant order and sold during the winter or spring. Fine manufacturing qualities sell best in the spring and summer. All qualities of tobacco for export, or prized to hold during summer or during only a month or two in the summer, should be prized in dry keeping order, or it will damage. As to what period during the year is the best time to sell mixed and common qualities of tobacco is and must continue to be a matter of conjecture. I think, however, that the records of prices during a series of past years will show that the spring and summer sales have been the highest.

An advance of less than $2.50 per cwt. above winter prices will not pay the planter for the loss in weight by drying, cost of extra handling, loss of interest, &c. The only safe custom for planters to adopt is never to sell their tobacco for a price that will not pay them a profit on the cost of production. This, however, will probably never become the general rule, because only those planters who have a surplus capital can afford to hold their tobacco. But all who can should do it.

After repeated solicitations I was induced to write the preceding articles on the culture and management of tobacco. They embody the gleanings from a long experience as a grower and manufacturer of tobacco. I could have made them more profuse; my object, however, has been to instruct, by keeping the important points prominently before the mind of the reader. Impressed with the belief that there is

yet much to learn concerning the culture and management of this complex crop, I submit them with much deference to the consideration of all persons who may feel an interest in the subject treated. J. M. BAKER.

Louisa Co., Va.

[This No. concludes the series of papers on the cultivation and management of the tobacco crop, which for several months have occupied a limited space in the pages of the *Farmer*. It is from the pen of a gentleman of much experience as a grower and also as a manufacturer, and we think will be acceptable for the guidance of those less conversant with its management. We tender our thands to Mr. Baker for the opportunity of making our journal the vehicle through which his experience and advice are placed before planters of the weed.—*Eds. A. F.*]

Facts and Results.

We are arriving at the middle of the year. We have cause and should be thankful for our success so far, as the crops are promising. The spring was variable—enough rain and rather much frost. We trust that some of the rumors may prove illusory. Wheat has many enemies and is affected by different weathers, viz: frosts, drought, too much wet, and hot, close weather. The same weather does not always prevail generally at the same time. The chances are therefore for enough and some to spare.

There are hardly ever less than two parties interested in the crops,—one is for making it too large and the other too small. The safest plan is not to be over-sanguine. If there are croakers, there are also speculators; as for ourselves we are anxious for good crops, so as to moderate the prices as well as to make money more plentiful. There is a notion that as agriculture flourishes so do communities prosper. In the world, as in the United States, there are lands of all kinds,—rich, poor, level, hilly, rocky and sandy,—most of which might be made to support populations; the same might be said with regard to climates. All soils are adapted to such growth of cereals and grasses as are suitable to the people and their live-stock. Your correspondent has in the course of his life and experience seen some rich and some poor sections of the country,—some naturally poor and some by uses and abuses. Every one has seen land of moderately good quality made rich by good cultivation and the liberal administration of natural and artificial fertilizers, and rich lands kept so by kind treatment. Once, in company with two gentlemen, in passing over a section of land in the main pretty fair, but one part quite poor, one asked the other what was such land worth? The reply was, not one-hundred thousandth part of a cent. He then asked me. I said, "The land laid well; surface sufficiently undulating; the timber no great things, but uses could be made of it; the climate excellent. Now, if sufficient capital, labor and management were brought to bear on it, it might be redeemed and regenerated." Some of those gentlemen who make two spears of grass grow where only one did before would do better than those that made one or none. While on the subject, the question might be asked, if on a poor place a man could by proper means make the two spears where only one was made before deserved such high commendation, how much greater should the man deserve who doubled his usual stand of grass? Let men be encouraged; no venture no make. Remember, the man that threw his bread upon the waters had a return of manyfold. Why should not the land be made fruitful—yea, to bloom as the rose in the desert. There are many countries densely inhabited whose lands were once poor. Where there is a will there is a way. We must apply our shoulders to the wheel before we call on Hercules. After we have done our best we must trust to Providence.

"He does the food supply, on which all creatures live:
To God, who reigns on high, eternal praises give;
For God will prove our constant friend,
His boundless love will never end."

RUSTIC

OUR FRENCH LETTER.

Preserving Green Fodder.

Messrs. Editors American Farmer:

The practice of preserving green soiling in trenches for autumn, winter and spring feeding, not only in dry but in uncertain climates, continues to make great strides. M. Goffart, the highest practical authority on the subject, is now feeding his cattle on maize put in trenches last September, when the frost had completely arrested the growth of the plant, the stems having only attained two-thirds of their height. The frost had even blackened the stems. When mown he had the maize cut by the machine into lengths of less than half an inch, and pressed into the trench without salt, or chopped straw, or hay. In a nutritive point of view, the food was more tender than in the ordinary case when cut when the ear is in the milky stage; but as the early cutting represented a loss of 30 per cent., he cannot state if this will be made good by the increased alimentary value. But what M. Goffart proves is that frozen maize preserves as well as any other; it takes three days to ferment, instead of the usual 12 or 15 hours, and maintains the same low temperature on being taken out of the trench as when being placed therein. M. Goffart, while he finds Mexican maize attains a very great height, its stems are so thick as to destroy the chopping machine. The same gentleman has just chopped and put into the trench for autumn feeding the produce of ten acres of green rye. To press the mass well together the trench when filled is covered with logs, on which large stones are placed, at the rate of half a ton to the square yard. M. Goffart reclaims peaty lands by applying large doses of fossil phosphates and then cultivating leguminous plants; this treatment rapidly extirpates the rushes. In Belgium green maize for trenching is generally preferred in the reclamation of healthy soils; the latter must be reduced to a good tilth and well manured. Maize being a "heavy feeder," especially of phosphoric acid and potash, hence bones and ashes ought to

largely enter into the composition of special manures.

Agriculture at the Exhibition.

When I state that agriculture is as brilliantly lodged at the exhibition as the fine arts or any branch of industry, this is equivalent to saying that perhaps never has the practice and science of agriculture been better presented for international comparison. While some of the exhibits may lack want of concentration, this will not interfere with exhaustive study. The visitor will have to traverse only a longer gallery. For fifteen days still all the collections cannot be in place. The specimens of English and American farm machinery are superb. Here competition will be sharp; the workmanship and finish suggest instruments rather than implements. A glance also at foreign manufacturers' lots recall much progress and much yet to be achieved. Farmers complain that the concession for the transport of stock per rail is dearer than forwarding by ordinary rates, and further, in case the so-called reduced tariff is accepted, the companies decline all liability. Connected with the show of live stock, it is to be regretted that time has not permitted the grouping as it were of the animals as they exist with the owner—that is, a competition of sheds and pens or farm-yards, with their various occupants. However, enough of novelties remain to cover the omission.

Co-operative Dairying in France.

In the departments of Iura and Doubs farmers unite their milk in common to produce cheese. These associations, numbering nearly 2,000, are known as *fruitières*. The plan has extended to the neighboring lowlands, as 1,700 of them exist in Franche-Counté, cheese forming the chief wealth of these districts. A townland clubs together, tacitly to bring all its milk to be manufactured into cheese, and the latter is divided *pro rata*. A president and a committee are annually elected; a *chalet* is selected in an elevated position, consisting of a large kitchen, a milk room and cellar. Here the milk of 40 or 200 cows is manufactured. The milk is brought every morning and evening, measured or weighed, and a receipt given. If the milk has been adulterated, skimmed, or turned, it is refused. The morning's milk is strained and mixed with the cream of the previous evening's milk, and then placed in the copper; rennet added—3 quarts of a preparation of the latter to 400 of milk—and coagulated. Every 300 quarts of milk yield a cheese, and each member, irrespective of what number of cows he possesses, receives a cheese for every 300 quarts of milk to his credit; his initials are made in the curd; except for his private use, no member can retire his from the common sales. The more the curd has been heated, the less it is subsequently heated. After being placed in the mould, it is turned five or six times during the first 24 hours; the cloths being changed as often; placed on a dry shelf, the cheese is salted in the morning, dried with a cloth in the afternoon; the salting requires two months in summer and three in winter, and when it has imbibed 2 to 4 per cent., it is cured. Cheese made from curd too much heated is soft and cracked; when the temperature is too low more salt is required. When attacked by mites the cheese is carefully cleaned, then washed with a pickle, and when dried rubbed over with oil. It is an error to believe good cheese can be prepared without good milk. One pound of cheese is made from 8 to 10 quarts of milk. The cheese thus prepared, known as *gruyère*, is two feet in diameter, and four inches thick, weighing 50 to 60 lbs., and varies in price from half a franc to 1 fr. per pound. The whey is given to pigs and also to cows.

The Phylloxera, &c.

The Senate declines to compensate vineyard proprietors for the loss of their vines by the phylloxera; the government lends every assistance in the way of experiments to get rid of the pest. At Beziers the vine-growers have formed a society to fight the bug; there are 29 volunteers pledged to adopt 35 different plans of attack, by means of destructive powders and special manures; by raising new plants from American stocks, and by the Faucon process of submersion—the best of the thousand and one "perfect cures" known.

General Morin, Director of the Conservatoire des Arts et Métiers, has technically examined the beef imported from Paraguay, by the Carré process—that of simply freezing the fresh meat by artificial cold. The general pronounces the system a success. However, with all the processes, neither legs of mutton nor sirloins are a single cent cheaper. What an opening!

Paris, May 23, 1878. F. C.

Virginia State Show.

We have received from Col. W. C. Knight, Secretary Virginia State Agricultural Society, a circular, giving the history of the society, and the progress made for the benefit of those for whom it is established. A united effort is being made to add to the 2,000 members now on the rolls of the society, and to secure a successful fair the coming fall. The Secretary says: "the society is so organized that no member or officer has any property-rights in the investments, but all are pledged by charter and constitution for the advancement of the general prosperity. The cost of membership adds to the *resources*, and the member is compensated by the *privileges* granted. The present membership of about 2,000 extends to nearly every county in the State, but out of 80,000 owners of farms and 40,000 other citizens engaged in merchandise, manufactures, and the professions who live by the products of the soil, there is a wide field to which the society may justly look for an increase. If but five or ten members can be added each year from each county, the means would be greatly enlarged, greater and better results accomplished, and the general interest more widely diffused.

Shipments of Live Cattle.—Since May 20, five shipments of live cattle have been made from this port, aggregating nearly 700 head. All of them come via the B. & O. R. R., are transferred directly from the cars to the steamship, and go to Liverpool.

The Dairy.

A Good Jersey Cow.

Editors American Farmer:

Hoping you and some of your readers are interested in Jersey cattle, I write you the yield of butter of one of my Jersey cows (Juno) for one week—weighed and printed this day. I had Juno carefully milked and her milk kept and skimmed separately for one week. She gave per day 17 quarts of milk, carefully measured by myself. The cream was churned yesterday and yielded thirteen pounds six ounces of butter (13-6.) Her butter was reworked to-day and weighed 13 pounds 3 ounces—having lost 3 ounces in the second working. It was then weighed in half-pound lumps and printed for market, and weighed 12 pounds 6 ounces,—having lost just one pound by the two manipulations. Juno gave 119 quarts of milk per week, which is 9 2-13 quarts of milk to make one pound of butter.

One month ago Juno gave 20 quarts of milk per day; but I suppose the flies and warm weather have caused her to shrink in her milk. If her milk when she gave 20 quarts was of the same richness as now, her product of butter would have been 15½ pounds per week. Juno was 4 years old last December, and a cow is not in her prime, or fully developed, until she reaches 7 years. There has been much prejudice against Jersey stock, but I think the prejudice is wearing away. Some object to them because they say they are so small. They are large enough for the dairy or beef either, if properly bred. I had to slaughter one of my Jersey cows this season; her net carcass was 500 pounds—paid me by the butcher. I have slaughtered two bulls—which net 750 pounds each, rendered and paid by the butcher.

A few days since a neighbor of mine showed me a postal card he had just received from a party, giving a week's product of butter of a half-Jersey cow. "Her milk of one week made 18 pounds 6 ounces of printed butter;" further this deponent sayeth not.

We are in the midst of wheat harvest—an unusally heavy crop of straw and tolerably well filled, and I think we may say a fine crop of wheat; a very heavy crop of hay; corn looks well.

WM. J. SCOFIELD.

Sandy Spring, Md., June 20, 1878.

A Great Yield of Butter from Five Cows.

We have reported in the *New England Farmer*, the account by Mr. G. T. Nutting of the Board of Agriculture, of his visit to the farm of Mr. E. R. Skinner, of North Turnbridge, Vt., "for the purpose of inspecting his cows, and the manner of keeping, by means of which Mr. S. has been able to sell, from five cows, the amount of 2,065 lbs. of butter in a single year." Mr. N. gives the following statement of how it is done:

Just look at the five cows, so clean, warm, and comfortable, although in an old-fashioned barn without cellar or elevated driveway.—They are patterns of animal contentment.—Suspecting a secret source of income—some hidden spring which would unlock the mystery of this almost unparalleled yield of butter—a look was taken into the barn before going to the house; and here it is, plain as day. Good hay, plenty of meal and bran, and abundant evidence that, if their owner does not share their quarters nights, (and we suspect that, on long winter nights, he spends many of the edge hours with them,) he really *lives* with them during the day, and spends his time mainly in studying the wants of his cows and the effect of any and all kinds and qualities of food given them. If he was not misunderstood, the feed is good hay cut in the latter part of June, wheat bran fed without fear of *over*-feeding, and *all* the meal each cow would bear, as indicated by her excrement and the character and quality of her milk. The study is constantly, "How much can I make that cow fully digest and convert into milk rich in butter?" and the results fully show a successful and satisfactory answer. Like a doctor, with his hand on the pulse of his patient, Mr. Skinner diagnoses each cow daily. He did not ask them to "show the tongue," but we suspect they so fully understand, and are so in sympathy with him, that they only needed the invitation.

In doors, really, the meeting was held with the hostess in the chair! Preparations for churning being made, our High Priest of the manger appeared in his priestly robes, consisting of an entire suit of pure white sheeting, showing that he did not approach the (to him) sacred office of churnster in a disrespectful and untidy manner. No hairs, no dust, dirt or specks from him in the butter. Neatness, as for a bridal ceremony, in all the "getting ready for churning" here.

During the second day of the meeting alluded to above, your correspondent stated the result of certain experiments made during the last three years in preparing butter color from carrots, and now for the first time made public. The expressed juice of the carrot being slowly evaporated to a creamy consistency, and then receiving granulated sugar, pound for pound, is put up in bottles for use, and is good for any climate, and for all time, (if it lasts.) Judge, now, of my surprise and gratification to know that one, even, of that crowd of listeners had profited by the suggestion. A nicely-prepared jar of Nutting's extract of carrot, home-made, was brought forward, and four tablespoonfuls stirred into the cream for twenty-eight pounds of butter, which came out on the wood butter-worker, and was then put in nice pound balls and packed for the Boston market.

Now, readers, here is manifest the *why* of the success in this small family dairy. Both in doors and *in barn*, the one sole farm interest of the household is in making the cows do their best, the milk yield its utmost, the cream make its best quality of family butter, and the butter find its most satisfactory market.

I have said the cows were in an old-fashioned barn. It is true. The manure is thrown out at

the north window, and there is no paint nor clapboards on the barn, but every window in that stable is a glass one, every crack is battened, and the stable is so warm that no frost is seen. These facts are stated that no reader of the FARMER may say that his own barn is not in shape or good enough to do as well as Mr. Skinner's. He contemplates soon turning the profits of his cows into a modern barn, and has a good locality for an elevated driveway, without which any barn is but half built and less than half planned. He will have both the driveway and an arrangement for water and salt at all times within reach of each cow, while in her stall. This latter device will save him much labor, for he is so careful to have *uniformity* in the quantity as well as the *time* of watering and salting, that water is carried in pails to each cow twice, daily, and salt put with meal morning and evening. Too much or too little of either, at any one time, impairs digestion, and hence disturbs the milk secretions.

Live Stock.

Sheep-Raising in Maryland.

There is evidently a renewed zeal in this State in favor of sheep-husbandry, and we have not for years had as many enquiries for the several breeds as we have received during the present year. Notwithstanding the abominable nuisance of sheep-killing dogs is to be continued until another session of the legislature, still the farmers appear to have hopes that the time will come when they will be able to secure lawful protection to a species of property which, as remarked in a recent communication of A. B. Davis, Esq., to the *Montgomery Sentinel*, should rank first in the scale of domestic animals, as he supplies in the cheapest and most wholesome form two of the three necessary wants of man, namely: food and clothing—"and to which may be added a manure second only to Peruvian guano."

We should at this time have a law in this State to protect our sheep from the destruction to which they are now exposed, if the farmers had paid more attention to their own interests than to the demands of political partisans. The last legislature seemed to ignore almost entirely the consideration of any subject bearing upon the peculiar interests of agriculture, if we may except that of the inspection of tobacco; and the betrayal of those engaged in that branch of industry, as well the planter as the merchant, was one of the most shameless evidences of the pandering to party and pelf, over justice and the public weal, which the records of our State legislation can produce.

In the communication of Mr. Davis, alluded to above, he gives his experience as to sheep husbandry, which we subjoin:

"About forty years ago I purchased from the late Noah Worthington, of Baltimore county, who had obtained them from the Girard Estate, in Philadelphia, a full-bred Southdown ewe and buck. My flock then consisted of 50 or 60 half-blood Merino and Mountain ewes. The weight of fleece I do not remember, but it was low down in scale, probably only from three to four per head, carcass ill-shaped, light and unthrifty. The infusion of Southdown blood was quite striking and manifest in the next spring lambs—larger, more compact, thrifty and hardy. By reserving the best ewe lambs, and culling and selling off the old ewes with the buck lambs, I soon found my flock very decidedly improved. To this improved flock I added a Cotswold buck, still continuing the culling system with sale of buck lambs as before. The result was that I had in a few years the largest, handsomest and most thrifty flock of sheep I ever owned; the annual clip of wool from a flock of from sixty to eighty averaging 6 pounds of wool, and sometimes a little in excess of that weight. My lambs and mutton always commanded a ready sale at good prices in the Washington market. From this flock I selected twenty choice ewe lambs, which I kept from the buck until the Fall before their second year. From this lot I got at their first clip eleven pounds of wool per head; and it was from these ewes, I think, that Mr. Washington Chichester got his first improved buck-lamb.

By this system of crossing, culling and renewing the buck, my flock continued for many years in a satisfactory and thrifty condition. The war coming on, the price of both mutton and wool very much appreciated. I was thereby tempted to further ventures in the sheep line. I bought 500 at one purchase, and then almost every lot that came along for sale, and almost as rapidly turning them over to city butchers and speculators,—the largest purchasers from me being H. B. Cashell and Richard Kirk, Esqrs., of this county. Offering lots grew smaller in number and much poorer in quality, but still I bought, as there seemed to be no end to the demand for both wool and mutton. At length a small lot came along which might almost literally be classed as halt, lame and blind. The seller, from Pennsylvania, had a ready excuse for their lameness and poor condition. The lot being small, it being all he could get and as he had brought them expressly for me, I took them. From that day I date a downward condition of my flock. The lot were deeply diseased with the foot-rot, a disease wholly unknown to my flock before, and with which they were soon inoculated—lame, limping and frequently upon their knees while feeding. All lost flesh, some wool, and many died. I called to my aid Mr. Jos. Kelly, of Laytonsville, who had had experience with the disease. He, with knife, blue-stone and corrosive sublimate, operated courageously and severely, but all to no purpose. I had the mortification of seeing my beautiful flock of Cotswolds, (a number of which I had still preserved,) run down with the foot-rot faster than I had improved them by careful crossing and culling. I determined to get clear of them entirely and give my pastures to the dairy, so the contagion left by almost every foot-print should be entirely

obliterated. Three years after I determined to purchase from the Baltimore cattle-scales fifty common ewes, (nineteen of which were killed by worthless dogs,) and since from Mr. Granville Farquhar, of Olney, a very fine Southdown ram. My lambs this spring show the same improvement as with my first experiment in crossing from an improved buck. The clip of wool of this spring has averaged 4¼ pounds, and pronounced by the inspector in Baltimore of good quality and condition. I shall not be satisfied until I again reach the yield of my twenty choice ewes,—eleven pounds each. A. B. DAVIS."

Profits of Sheep.

Messrs. Editors American Farmer:

Seeing a piece in your May No. on Sheep Profit induces me to give a statement of my little experience. In December, 1876, I purchased 5 Merino ewes, for which I paid $16; in February, 1877, they all had lambs—one died.

I sold 3 buck lambs for $5 each	$15 00
I sold 22 lbs. wool for 38 cts	8 36
	$23 36
Now on hand 1 buck, 5 ewes, 5 lambs, at $5	$55 00
51 lbs. wool at 25 cts	12 75
	$72 75
	$96 13

I clipped 17 lbs. wool from the buck which was only 15 months old; some of the ewes clipped 8 lbs. of wool. I kept no account of the feed, thinking the manure paid for it, which was 1 quart meal once or twice a week in bad weather. Perhaps I have valued my flock too high, but the buck will make up for it. Those that have seen him say he is a much finer buck than one which was bought by my neighbor in Fredericksburgh, for which he paid $25.

Not wishing to appear conspicuous before the public, you will permit me to withhold my name.

As I am a reader and subscriber, I would like to know, through your columns, if super-phosphates will act well upon land that has been limed recently.

Lancaster County, Va.

[We believe the objection sometimes made to the use of super-phosphate under the condition named is without just foundation. The soluble phosphoric acid when applied to the soil soon becomes "reverted" in any case.]

Digestion in the Horse.

The horse's stomach has a capacity of only about sixteen quarts, while that of the ox has 250; in the intestines this proportion is reversed, the horse having a capacity of 190 quarts, against 100 of the ox. The ox and most other animals have a gall-bladder for the retention of a part of the bile secreted in the intervals of digestion; the horse has none, and the bile flows directly into the intestine as fast as secreted. This construction of the digestive apparatus indicates that the horse was formed to eat slowly and digest continually bulky and innutritious food. When fed on hay it passes very rapidly through the stomach into the intestine. The horse can eat but about five pounds of hay in an hour, which is charged during mastication with four times its weight of saliva. Now the stomach, to digest well, will contain but about ten quarts, and when the animal eats one-third of his daily ration, or seven pounds, in one and one-half hours he has swallowed, at least, two stomachs full of hay and saliva—one of these having passed to the intestine. Observation has shown that the food is passed to the intestine by the stomach in the order in which it is received. If we feed a horse six quarts of oats it will just fill his stomach, and if, as soon as he finishes this, we feed him the above ration of seven pounds of hay he will eat sufficient in three-quarters of an hour to have forced the oats entirely out of his stomach into the intestine. As it is the office of the stomach to digest the nitrogenous parts of the food, and as a stomachful of oats contains four or five times as much of these as the same amount of hay, it is certain that either the stomach must secrete the gastric juice five times as fast, which is hardly possible, or it must retain this food five times as long. By feeding the oats first it can only be retained long enough for the proper digestion of hay; consequently, it seems logical, when feeding a concentrated food like oats with a bulky one like hay, to feed the latter first, giving the grain the whole time between the repasts to be digested.—*Colvin.*

Veterinary College.

We have received and examined with much interest, the triennial report of the American Veterinary College, from which we learn that the exhibition has been signally successful. The last session witnessed the largest attendance of veterinary students ever assembled in this country. The unprecedented success is largely attributed to the associating of didactic instruction with the immense advantages afforded in the hospital department of the College. There are eight professors, who lecture regularly. During the collegiate year ending March, 1878, 1,487 animals were entered in the clinical book of the Hospital. In 1876, the whole number was 731; in 1877, it reached 1,061. The average number of patients each month, for the year 1875-'76, was 73; during 1876-'77, it was 88; in 1877-'78, it was 124. Of the 1,487 patients entered the last session, 30 died, 28 destroyed, and 1,423 relieved or cured; 224 operations were performed. Persons wishing further information can address Dr. A. Liautard, V. S., Dean of the Faculty, 141 West 54th street, New York.

PAINT FOR OUTDOOR WORK.—A correspondent of the New York *Tribune* says: Having had a large practical experience in paints of all kinds, I find the best priming for old wood-work, and in fact all wood-work that is exposed much to the weather, is simply Spanish white, or as it is commonly called, whiting, mixed in pure raw linseed oil; let it stand until it is thoroughly mixed, then reduce with oil and add the drier sufficient to dry it. This makes the best, hardest, most durable paint for first coat, of anything I have ever tried. Reduce it to an ordinary thickness for priming, and apply with an ordinary brush. It must be thoroughly beat together, so as to work out all the lumps of the whiting.

Poultry Yard.

Seasonable Hints.

By G. O. Brown, Montvue Poultry Yards, Brooklandville, Md.

Young Stock—How to Feed, &c.

Special attention to the young chicks now will repay what extra time it requires to see after them *properly*. The early March broods should now have the sexes separated, and they will grow much faster and larger if kept apart. Feed your later-hatched broods often; it is far preferable to feeding only three times each day, and more according to nature. Feeding three times a day, and each time giving them all they can *cram*, until their craws make them look like miniature pouter pigeons, makes them sluggish, lazy, and they do not do as well as when fed more often—say five or six times each day, each time giving *less* than *half* what they are generally *stuffed* with. Feeding in this way keeps them bright and active, and during the feed intervals they will run out on foraging expeditions, which gives them the healthful exercise so beneficial. Pure, fresh clean water should be given *with each feed*. Where you have several broods to feed, follow around and throw out the water from the drinking cup after you are through feeding, so it cannot stand and heat in the sun. Look out for sudden showers, and see that your coops are placed on the ground so the water will not run inside. If any of the chicks appear droopy and do not seem to thrive, look for vermin on them, and grease their heads, (lard or fat-meat grease will answer for the purpose,) under the wings and over the vent; do this at night, during the last feed, or else the mother-hen will be apt to disown those that you grease, as it sometimes makes them look a little odd. The *earlier* the first feed is given the better, and let the last feed be as late in the evening as possible. Have your coops built so sunshine and air can have free access to them; every three days at least move your coops, and spade up the ground on which they were standing as soon as the coop is taken from it.

Chicks—What to Feed Them.

To make them thrive and grow rapidly, they need, with careful attention, good feed, and as much of a variety as it is possible to obtain. A correspondent asked us to "give the best food for young chicks, to make them grow quick." Our experience has been that, aside from the first two or three days, (when we feed *hard* boiled eggs and stale bread-crumbs,) which is confirmed by all others who have used it, is that "hominy chop" (which is made from the heart of the best kiln-dried white corn) is the best food for young chicks and also for laying-hens. It should be mixed with boiling water and let stand covered up for twenty minutes so as to *swell* and *cook*; mix so it will *crumble* when thrown upon the ground. Chicks prefer it to any other kind of mixed food. It is cheaper always than corn meal; and as white corn contains less heating qualities than yellow, its value as a summer food is great. Dry curd is also a good feed for a change—say hominy chop in the morning at sunrise, curd at 8 or 9 A. M.; hominy chop with one-third middling about noon, and 4 P. M. pound up what meat bones that come from the beefsteak, or mince the table scraps and feed them, and cracked corn or wheat at last feed—this for young chicks; after they are two months old three feeds, with what they secure foraging, is sufficient. If you have *milk*, give it to them once a day—morning best time. They also are fond of "clabber" or "lobbered" milk. With a new brood, for the first ten days, night and morning throw in a handful of corn for the hen *before* you feed the chicks, so she may eat first, which she will do after vainly trying to coax the young chicks to partake with her; then throw in the feed for the little ones. After a couple of days or so the chicks will run to meet you when you go to feed them, when you can feed them just outside the coop; of course, give the hen her ration of corn. If she has too much soft food she is apt to commence laying too soon and train the chicks too young. After a long rainy spell a *little* cayenne pepper in the mixed feed is of advantage. They should always be situated where they can have a run upon short grass. The best plan is to keep your coops on plowed ground about 20 feet from the grass; the chicks then will run out early without going through the dewy grass.

Adult Fowls.

Moulting season will soon be at hand, and a little extra feed should be given the fowls. We generally feed three times a day—morning, noon and night. First two feeds, hominy chop mixed with boiling water—one of them half middling; at night whole grain—oats, corn or wheat. About twice a week, to 4 quarts of the feed, an even tablespoonful of flax-seed meal, mixed thoroughly through before it is scalded, after the new feathers begin to appear. Once or twice a week some old rusty nails in the drinking water is of advantage. Sitting-hens will now need especial care during the "hot spells." Eggs of any of the Leghorn, Hamburghs or Houdan can be set up to the 15th of August; as they grow and feather up so rapidly they will before cold weather comes be prepared for it. Separate the sexes as soon as you cease breeding from them, and keep them separate until January. When the hominy chop cannot be obtained, *coarse* ground corn-meal should be used instead. For summer, oats should almost, with *fowls*, take the place of corn.

Instructive Items.

The Vivary—Duck, Fowl and Pigeon.

——"At a word,
His feathery subjects in obedience flock
Around his feeding hand, who in return
Yield a delicious tribute to his board,
And o'er his couch their downy plumage spread."
—*Dodsley*, 1703.

Messrs. Editors American Farmer:

In reference to inquiries of correspondents upon page 92 current volume, viz., Ducks' Eggs, Hamburghs and Pigeons, we would add a few additional remarks, if agreeable, to the editor's comments thereon.

It being a branch of rural economy that has at times occupied considerable of our time, labor and study, and believing it to be the duty of

every one to render any information they may possess, however small or humble the subject, that will contribute to the pleasure or the benefit of society, we present herewith our mite.

In looking up our rural notes and references,—which are quite voluminous and suggestive,—we have had it in mind to write you occasionally on the subject at the head of this article, if found agreeable to yourself and acceptable to the readers of your popular and widely-circulated journal. One who keeps his eyes open, with a desire to make the most of this up-and-down journey of life, on which all are traveling to the grave as to a common goal, will often stumble, as it were, on curious and instructive items or quaint ideas where least expecting to find them, and especially among the records of the older writers, some of whom will admit of occasional extracts: our object being rather to furnish short and instructive facts than lengthy systematic treatises, as

——"'Tis of books the chief
Of all perfection to be plain and brief."
—*Butler.*

Poultry Poetically.

In a quaint old book, "*Dodsley's Agriculture*," (1728,) by an able and spirited poet and writer, Robert Dodsley, (1764-1803,) Sherwood, (England,) whose excellent conduct raised him from a livery servant to be one of the most influential men of his times, in a superior treatise on Agriculture, a poem in three cantos, in a description of the "The Farm," "The Poultry Yard," etc., he says of

Duck, Fowl and Pigeon—

—"There the loud herald of the morning struts
Before his cackling dames, the passive slaves
Of his promiscuous pleasure. O'er the pond,
See the gay gander, with his female train
Bending their lofty necks; and gabbling ducks,
Rejoicing on the surface, clap their wings!
Whilst wheeling round in airy wanton flights,
The glossy pigeons chase their sportive loves,
Or in soft coolings tell their amorous tale."

The query of your correspondent "Aquatic," page 92, in regard to duck-egg setting ["Which is best to set ducks' eggs under, a hen or a duck?—*Aquatic.*"] will depend upon the *variety* of *duck*, and facilities at command for the convenient use of hens.

The species of domestic or dabbling ducks, usually raised in this vicinity and southward, are known as the Common or Puddle Duck, and the Muscovy Duck, which differ from each other in species, habits, &c. Of the former, or Puddle Duck, although a good layer, it is not naturally disposed to hatch its eggs until late in the season; is too fond of the water and too apt to suffer her eggs to get cold; she will also, no matter what sort of weather it be, if not prevented, bring forth the ducklings to the water the moment they break the shell,—a practice always injurious and frequently fatal. These reasons and many more too long to particularize here have usually induced persons who may possess them handy and, as remarked page 91, prefer sitting

HENS ON DUCK EGGS.

These foster-mothers are milder, more assiduous and patient in sitting, more convenient to manage, and care of their young; are not so liable to be trodden down when hatched, leading them more on dry land to get a little hardy before they take to the water; scratch for them, and shelter them under their dry and warm bodies and wings; altogether making better nurses than their own proper parent.

The young also incur more danger with a duck than with a hen,—for should the young brood be attacked by an enemy, the old duck, in lieu of putting herself between it and danger—as the hen would do—she opens her mouth and shoots obliquely through the water, beating it with her wings; during these useless movements the invader seizes its prey with impunity.

The *Muscovy Duck* (Anas moschata) is a distinct species, and not a mere variety, much larger than the common duck, and is well deserving a place in our poultry yards.

This duck in our southern climate is, perhaps, more hardy than the other; lays in the spring and fall, is easily fattened, and a prolific breeder; sets more steady and faithful on its eggs,—which require a few days longer,—and may as well *be permitted to hatch her own young*. The male pairs readily with the common duck, producing by the cross a hybrid or mongrel breed; but these, though much larger and good layers, are unable to propagate their species; and hence, to keep up the stock, M. Oliver de Serres (*Theatre d'Agriculture*) advises to continue crossing every year, by keeping a sufficient number of Muscovy drakes with the common ducks, such as one drake for every five or six ducks, setting the eggs under common hens. (Muscovy duck is a corruption of Musk duck, and the bird is a native of South America.) Differing so in species and habits from the common duck, the young Muscovies require a treatment, to be successful, more like that for the young of tender gallinaceous fowl than as an aquatic bird; but more of this hereafter.

DUCK SITTING.

"Cluck, cluck, cluck; I wish you much luck,
Said a motherly hen to a sitting duck!"—*Todd.*

While hens make good foster-mothers to the ducklings, and the task is imposed upon them of a week's longer sitting than is in conformity with their own nature, it may be desired to adopt the natural plan of the common ducks bringing out their own kind; and there is no doubt that when a duck chooses a nest for herself, lines it with her own down, and brings out a brood, that the ducklings are, *after they get over the fever from their pinion wings*, better than any reared under the care of a hen,—the instinct of the duck being more congenial to ducklings in leading them to places in search of food peculiar to their tastes, as well upon land as upon water. With these two views, advantages or disadvantages, of hens vs. ducks, we leave the question with the reader—as the showman cries, "you can take your choice, good friends, from the Rasores or the Natatores; for, as Miss Landon writes,

"So much to win, so much to lose,
No marvel that I fear to choose."

But for the length of this paper we had it in view to give some hints as to *why duck eggs fail when sitting*; how *to tell impregnated eggs*; the *management* or *secret art of raising ducks* in abundance, with the *fattening* and *dressing for market*, *care of feathers*, *etc.*, as well as *a few good*

authorities on *duckology*. But we forbear for the present, to present a few words upon

Hamburgh Fowls.

To the second question, on same page as above, ["What variety of the Hamburghs are the most handsome?—*Persimmons*,"] is a matter of taste, as the editor truly remarks, when they all possess attractions, and "man is prone to be opinionated." It is thought a slight description of some of the varieties, with a few general remarks upon the advantages of the entire *class*, would be more satisfactory in deciding upon the special variety. As they are "The Bird of England," we must look to them for its origin and data.

History and Varieties.—The original Hamburgh was a crested fowl, and nearly allied to the Poland; was first imported from Holland, and classified in England by the Rev. Mr. Dickson, Rector of Notwood, and adopted by all the poultry clubs of that country. This standard recognizes only five varieties, viz: the Gold Spangled, the Silver Spanged, Gold Penciled, Silver Penciled, and the Black; while Miss Watts, an English writer, who is considered good authority in such matters, mentions White, Buff and Laced, to which A. McLean Howard, Esq., of Toronto—a man as well posted on the Hamburgh fowls as any one in America—adds the Cuckoo color or Dominique; while L. Wright, author of *The Practical Poultry-Keeper*, London, considers Mr. Dickson's classification, as above, into simply Spangled and Penciled, as not sufficient to mark the distinct varieties that exist.

Gold Spangled, a variety about which great difficulty among breeders has existed,—as to whether the *hen-tailed bird* or the *long sickle-tailed bird* is the correct thing. To go into the different sub-varieties of the Golden Spangled Hamburghs would take up more room than we have space to spare. Suffice it to say, this beautiful variety of fowl is known in some sections of England as the Golden Pheasant, from the supposed resemblance of its spangled feathers to those of the Cock Pheasant. The special marking of the plumage in the Golden Spangled are a golden yellow ground, with spots like the Silver Spangled, beautiful regularity of which, vivid contrasts in colors and unique appearance, *generally entitle them to the first rank among the more ornamental varieties.* They are perfect patterns of neatness of make, a little under size, continuous layers, flesh excellent and skin tender; eggs small, very white, and tapering at one end; their constitution less robust than some other varieties; *are great favorites with amateurs*, and better suited to them than the farmer.

Silver Spangled are more easily bred than the Golden Spangled; are pure white ground, with a round black spot on the centre near the end of each feather, all over the body white,—though sometimes spotted in the neck.

Gold Penciled are totally different in color and marking, and breed truer to color, etc., than the Golden Spangled; are of golden yellow ground, like Golden Spangle, with black bars across the end of each feather, with golden neck hackle, pure, without a spot to be seen.

Silver Penciled, (known as Creole or Bolton Gray,) which are a pure white ground, with black bars on each feather, with pure white neck hackle, and are in all respects similar to the Gold Penciled, substituting a white for a golden background. The Penciled varieties are rather smaller than the Spangled, and lay about an equal quantity of eggs, though the latter's eggs are the larger.

Black Hamburghs, which are pure black in feather and legs, rose comb, possess many excellent qualities; are rather larger than any of the preceding varieties and most excellent layers of good-size eggs and not large eaters; inclined to roam, by which much of their living can be procured in summer when worms and insects abound. They are hardy; and the chicks, unlike the Spanish, come early into feather. The weight of the cock bird, 4 1-5 to 5¼ pounds; that of the hen, 4 to 5 pounds.

If the Golden Spangled birds are considered in the first rank among the more ornamental varieties, so are the Black Hamburghs to be recommended for profit, on account of the large size and number of their eggs,—as this variety, according to the author of "The Practical Poultry Keeper," is the most extraordinary egg-producer of all breeds known.

Hamburghs' Value.—There are none, perhaps, except the game cock, that approaches the Hamburghs in symmetry and brilliancy of plumage; are great layers but poor incubators; are great favorites of those that require an abundance of eggs, rather than frequent broods of chickens; with a free range—for they are impatient of restraint—small and light, they fly like birds, and even a ten-foot fence will not retain them in a small run. A clean and airy roost, and decent feed, there is no fowl that will excel or even equal them as layers. L. Wright tells us that "each hen will lay from 200 to 250 eggs in a year, which certainly exceeds the production of any other fowl;" in fact, they lay nearly every day throughout the year, except during the moulting season, whence they used to be called "Dutch everyday layers." They rarely show any disposition to sit unless in a state of great freedom; require but little food besides what they *scratch* for,—and this they do to perfection,—lay a middling-sized egg, but rich in quality, fat earlier and younger than most varieties of fowls, and, as birds for the table, are too small to figure much, though for the smallness of the bones they carry rather more meat than expected, and what there is of it is of first-rate quality, juicy and tender, with but little offal.

As remarked, they do not bear confinement,—which seems very repugnant to their natures,—as well as some others. This may be the cause of disappointment in these fowls with some who have kept them in that way. But there is a "fitness of things" even with respect to hens—an adaptation of different kinds to different conditions that must be understood and acted upon, or disappointment is sure to ensue.

Different varieties of fowls have different points of excellence and peculiarities of habits that adapt them, in a great measure, to different treatment, location and circumstances; and it is evident that no one kind is the best for all places and purposes, even in the same climate. And this is a point which should not be overlooked by those who desire to engage in the successful

management of poultry for either its pleasure or profits. JNO. H. KING.

Washington, D. C.

[TO BE CONTINUED.]

To Cure Chicken Cholera.

A party who claims to have experimented largely with it, claims that a mixture made of equal parts of red pepper, alum, rosin and sulphur, will cure chicken cholera. Feed a tablespoonful of this mixture in three pints of scalded meal daily, and the chicks will get well speedily. —*Poultry World.*

Work for the Month—July.

The securing of the perfected summer crops is now engaging the attention of our farmers, and we extend to all an expression of our hope that their harvests are bounteous and likely to be in demand at remunerative prices.

Wheat.—In most quarters whither the *Farmer* goes this crop will have been secured; but where anything is still to be done, let it be at once attended to, that no risks may be run by the crop after the expense of its cultivation and harvesting has been incurred. It is preferable, when possible, to thresh without first putting into the barn or stacking, if convenient to do so.

Cultivation of Corn.—Where the crop is not ready to lay by, the cultivators should be kept going, and, after the abundant rainfall we have had, it is not improbable there will be a season more or less prolonged of drought. The more frequent the workings the better for the crop, as the repeated stirrings of the soil not only keeps down the weeds, but preserves in the lower strata the greatest amount of moisture.

Hay Harvest.—Timothy ought to be cut before it is fully ripe and when the seed is in the milky state. If cut before, the hay will be light and innutritious. Do not cut it too early in the morning; wait for the dew to dry off. A few hours exposure to the sun is sufficient if to go into the barrack or barn. When once dry, do not, if possible to prevent it, allow it to get wet, as dew and rain both blacken it.

Millet and Hungarian Grass may be sown up to the middle of the month. Give either, by preference, a good soil, or one to which manure is liberally applied. Plow deep to escape effects of drought, put in good order, and you may expect with ordinary seasons a good crop of either of these useful forage crops.

Corn for Fodder may be put in up to the end of the month. We see no reason to change our recommendation heretofore made to sow in drills and give it one or two workings with the cultivator.

Buckwheat is best sown about the middle of the month. The land, to make it a remunerative crop, ought to be in good condition. Sow from half a bushel to three pecks of seed, harrowing it in and roll. An application, on most lands, of 150 pounds of super-phosphate to the acre will pay.

Tobacco should have careful working, in order that the ground may be kept light and porous and the grass destroyed.

Fall Potatoes—Are apt to suffer from neglect. Maintain a condition of lightness and cleanness in the soil by frequent workings, and give one or two dressings of a mixture of ashes, salt and plaster. A couple of bushels of this to the acre will be highly advantageous on many soils.

Turnips.—To the 20th of the month Ruta Bagas may be sown, and if you are fortunate enough to get them in shortly before a shower then quicker germination is secured. Flat turnips may be put in from the 25th of this to the same date in next month,—the earlier sown being more productive, but not so good keepers. New land is favorable for the turnip, and a sandy loam suits it best. The ground ought to be in good order, and where fertilizers are needed, either to supplement the natural qualities of the soil, or to give them an early start, super-phosphates or ashes will be found generally the best.

The seed ought to be sown as soon after the ground is prepared as possible, as the fresh earth gives it a quicker start. These turnips are usually sown broadcast and harrowed in. The fly, which is sometimes very destructive, and especially on land which has long been in turnips, is gotten rid of by dusting the rows with ashes, air-slaked lime, or plaster. As soon as the plants reach the rough leaf, they are safe,—hence the necessity of pushing them quickly on.

Root Crops, of all varieties, ought to be often and thoroughly worked, so that the ground is kept open and that the plant-food shall not go to the support of weeds and grass.

Meadows which are to be set in August should have a preparatory deep plowing and repeated harrowings, that a fine tilth may be secured. A peck of seed to an acre where timothy is sowed alone is sufficient; and an application of one hundred and fifty bushels of bone-dust, twenty bushels of ashes and two of salt will be advantageous on most soils.

Fences should be looked over and repairs made when necessary, and all briars and weeds cleared out from the rows.

Live Stock of every kind ought now to have some extra care. See that working stock is fed with regularity. The sheeps' troughs ought to have tar put in them to protect them against the fly. Give hogs the run of a clover field when practicable, or at any rate provide them green food.

The Peach Country—Crop Prospects.

We spent several days in June—just in the midst of the wheat harvest—among the peach orchards of Maryland and Delaware, examining in person, and making inquiries on every side of the growers, as to the condition of this so important crop to our section. The conclusion reached, after a widely extended observation and after hearing and comparing the opinions of many cul-

tivators and handlers, is, not only that there is a great diminution from the promised yield of the early season, but that the crop will approximate very closely to a general failure.

There are isolated instances where partial crops will be gathered, and even a few scattered orchards which will give moderately full crops, but these are cases so rare as to be regarded almost as phenomenal. Indeed the present condition of the crop, generally, presents features which are phenomenal throughout, and alien to the experience of the most observant orchardists. The fruit, which, in a normal season, is expected to drop more or less from the trees at certain periods during its growth, has this season fallen almost continuously since it first "set." In one orchard one variety will have disappeared entirely, whilst in the next the same sort will be most abundant; and no rule seems discernable as to the influences which have been operative. The trees bearing the most peaches which we have seen this season were Smocks, which, as the owner informed us, had produced no crop at all for four years. Different kinds seemed to have failed, or partially succeeded, indifferently, in adjoining or even the same orchards; but whether this result is attributable to the effects of frost or to the unusually great rainfall is a debatable and unsettled question.

In all of the greatest peach-producing counties of Maryland—Cecil, Kent, Queen Anne's, Caroline and Talbot—the general condition of the orchards is about the same. Occasionally an orchard, or a portion of one, warrants the hope of a moderate yield, but, as a rule, the expectation is not much, if any, over the one-tenth of an average. The most favorable report we heard was from an orchard of Col. Wilkins, in Queen Anne's, which is said to promise unusually well, though on his farms in Kent the prospect is little, if any, better than his neighbors'.

In Delaware things appear, if possible, a little worse than in our own State, and farmers whose greatest dependence is upon their peach crop feel, naturally enough, very despondent. We passed a great many orchards, and it not unfrequently happened that we drove for miles, with trees on either side, without seeing a single peach. The estimates of their crops by the Delaware growers vary from one-tenth to one-thirty-second of that of 1875, when the total shipments by the Delaware R. R. were 4,117,500 baskets, and the entire yield of the peninsula was estimated at 8,782,716 baskets.

The wheat crop of this section, whilst not coming up to the expectations formed in the spring, has generally proved to be a fair one. The acreage was unusually large, the growth of straw remarkably heavy, with the heads, as a rule, moderately large and well filled. The weather from the last of May up to the time of harvest was exceptionally favorable, and the rust which threatened to seriously affect the crop proved less injurious than was to have been expected, though we heard of one or two cases where the crop was badly injured. The Fultz and the Red Mediterranean varieties seem generally to have done well; but the Clawson suffered not only from the red rust, but was much damaged by fly.

The corn crop is backward, but grass and oats looked well almost universally.

A person travelling the route from Chestertown, Maryland, to Wilmington, Delaware, has an opportunity of passing some of the finest farming lands we think he can see anywhere. The country around Middletown is like a garden: the soil is productive, the improvements substantial and attractive, farming operations carried on with skill and enterprise, the roads maintained in good condition, the farms enclosed by the neatest of live fences, and around all the most obvious signs of thrifty and successful agriculture.

Several extended drives in this vicinity gave us the opportunity of seeing its finest farms, including those of the Messrs. Shallcross, Cochrane, Clayton, Williams, Jones (son of the late Major John Jones, an old friend and correspondent of the *American Farmer*) and many others, some of which may well be designated as models of well appointed and skillfully cultivated estates,. We also passed through the nurseries of Edward R. Cochrane, at Middletown, and Polk & Hyatt, at Odessa,—both well-ordered establishments, exceptionally favorably situated in the heart of the peach-growing district..

Middletown is a neat and attractive country town, and as the great station for its shipments largely concerned in the success of the peach crop. During its hight, and when the Peninsula Agricultural and Pomological Association's fair is held, it is a lively and bustling place. The fair is almost invariably a success, drawing large crowds of visitors, and always presenting a fine and varied collection of fine animals, implements and machinery, fruits and other farm and orchard products; besides an innumerable quantity of products of their skill and taste, in the line of domestic goods, from the ladies, who take great interest in its success.

Horticulture.

Maryland Horticultural Society.

The June show was one of the largest of the monthly displays ever held by the society. Not only was there a great abundance of cut flowers, handsome designs, baskets, &c., but some plants of admirable growth, robust health and effective coloring. The tables of Messrs. Spence, Perot, Rasin, Hoen and Pentland, and of Patterson Park, were conspicuously handsome. The fine collections of Gloxinias of Messrs. Ernest Hoen and Perot were also extremely creditable. Messrs. W. D. Brackenridge, August Hoen, Cromwell & Congdon, Burger and John Saul, of Washington, D. C., had excellent collections of cut flowers.

Mr. Saul showed numerous flowers of his new seedling Pelargonium and was awarded for it one of the society's certificates of merit.

The following are the prizes reported by the judges: Best collection of Roses, cut flowers, $10; second best do., $5, Cromwell & Congdon; best collection Remontant Roses, cut flowers, $3, John Saul, Washington, D. C.; best 6 specimens ornamental foliage plants, $4, R. W. L. Rasin; second best do., $2, R. J. Halliday; best single specimen ornamental foliage plant, $2, R. W. L. Rasin; 6 variegated foliage plants, best, $4, W. H. Perot; second best, $2, R. W. L. Rasin; highly commended, W. W. Spence; best single specimen variegated foliage plant, $3, W. W. Spence; second best, $2, W. H. Perot; best 6 Pelargoniums, $4, James Pentland; best 12 Ferns, $4, R. W. L. Rasin; second best, $2, James Pentland; best 6 Lycopods, $2, W. H. Perot; second best do., $1, R. W. L. Rasin; best 6 Fuchsias, $3, James Pentland; second best, $2, Cromwell & Congdon; special mention, Ernest Hoen; best collection Gloxinias, $3, W. H. Perot; second best, $2, E. Hoen; best pair hand bouquets, $3, Arch'd Anderson; second best, $2, G. Burger; commended as unique, John Cook's; best basket cut flowers, $3, A. L. Black; second best, $2, Miss Clara Pentland; best table design, $5, John Cook; best collection cut flowers, $5, John Saul, Washington, D. C.; second best do., $3, August Hoen; best display blooms hardy Herbaceous plants, $3, G. Burger; best bouquet indigenous flowers, $3, Miss Lizzie Patterson; collection of Strawberries, special premium, $3, John Cook; best quart Raspberries, $2, John Cook; best collection Cherries, $3, and best quart, $1, August Hoen; best collection vegetables, $5, R. W. L. Rasin.

AMATEURS.—Best collection Roses, $3, Mrs. A. R. Sappington; second best do., $2, best 6 named varieties, $2, best collection cut flowers, $3, Master Will. Sands; best hand bouquet, $2, Master Robert Rasin; best basket cut flowers, $3, Master Willie Feast; second best, $2, John George Graue; special, $1, Chas. L. Kemp, Jr.; best quart Cherries, $1, Master Robert Rasin; best quart Currants, $1, Chas. L. Kemp, Jr.

SPECIAL.—James Pentland, Roses in pots, $2; S. Feast & Sons, blooms of Clematis Jackmanii, $2; Chas. L. Kemp, Jr., for cut flowers, $1.

COMMENDED.—W. D. Brackenridge, for collection variegated shrubs and trees; Ernest Hoen, for Tuberous Begonias; John Saul, for blooms of double Begonias; Patterson Park, for general collection plants, in fine health and well grown; James Pentland, for finely-bloomed Geraniums; W. W. Lawrence, Gooseberries.

CERTIFICATE OF MERIT.—John Saul, Washington, D. C., for his new Pelargonium "Mrs. John Saul."

Potomac Fruit-Growers.

JUNE MEETING.

On the tables were several varieties of strawberries,—President Wilder, Fillmore, &c.; but the Highland Beauty took the palm for (among its other qualities) its perfect shape, even at this late period of the season.

The Subject of Grapes

was under consideration. Prof. Taylor, Microscopist of the Department of Agriculture (who, by the way, is a *savant*) was asked to lead in the discussion and give his views upon grape blight.

"This is a very important topic. *The cause is excessive moisture about the time of the coloring of the fruit.* The superabundance of rain causes a new growth of the wood, and thus, as the fruit is deprived of its proper nourishment, it rots. To this theory it is objected, because all varieties do not suffer alike. The reason that some escape is because of the hardness of the wood, which prevents the absorption."

The professor illustrated the principles of absorption and evaporation by a pine floor. If even a thin shaving be taken off the flooring will shrink, which the crust before prevented.

"If just enough rain falls you will have a fine crop of fruit. On the other hand, if the season be excessively dry your vines will be injured by the *thrips*, although the exception to this is the Concord, which is not affected by them.

"While in New Jersey, last summer, I saw a vineyard where, by the application of large quantities of sulphur, the vines had been badly burnt, and quite destroyed; another, which by a judicious application of plaster and sulphur mixed, had caused a strong growth and plenty of fruit.

"I also learned how some vine-culturists manure their grape vines (on their sandy soil.) They dig down say this year on one side and fill the hole with stable manure; the next year on another side, and so on. The roots luxuriate in this fertilizer."

Speaking of Vineland and the seeming failure of the grape crop there, he said:

"The reason is *there* they build castles and expect the grapes to pay for them; while at Egg Harbor the German is satisfied with a shanty, and his effort with grape-growing is a success."

The professor also spoke of the necessity of sowing seeds deeper than ordinary on such soils as that of New Jersey, and mentioned that peas sown deep will not mildew.

Mr. Pierson raised the question of summer pruning, saying "a gentleman who pretended to

know said that the vine should be pinched off at the second joint beyond the last bunch of grapes and all laterals should be removed; but he found that his unpruned vines bore the best fruit."

Mr. Pitt said "some years since the viticulturists along the shores of Lake Erie practiced summer pruning, but were obliged to abandon it, as they lost their fruit. Grape disease comes not only from summer pruning, but also from want of food and by over-bearing. G. F. N.

Washington, June, 1878.

Second Crop Irish Potatoes.

For several years past our large potato-growers have paid more and more attention to growing their own seed, from cullings of the June harvest. They find them as early and as productive as the Northern-grown seed; indeed many contend that the yield is greater from home-grown seed; this arises from the fact that those of our growing, being in general smaller and having more eyes, plant at least one-third more surface, requiring more guano and compost. Since the war, we have had no such yield in quality and quantity of marketable tubers as the present season. Thirty to forty barrels sold from each barrel planted, has been quite commonly the result in this section.

We are now planting for the second crop, and the greatest difficulty we find is in getting them to come up. The potato germinates at about the same temperature—60°—of wheat and oats; and if the months of July and August be dry and hot, the sets are apt to lie dormant until the cool days and nights of September, when there is not sufficient time before frost for the tubers to develop to any size.

In a discussion at a farmers' club some years since, the following was considered the best practice to obtain success: let the cullings be placed on the floor in a cool cellar, (some persons spread them in the open air under shade trees until they turn greenish,) until well cured. Then cut them a day or two before planting. In general we select the part of the ground where the early crop was grown, where the soil is *most retentive of moisture*, planting in shallow furrows in the same manured row, dropping the sets only six inches apart and covering with one list of the turn plow. If the land becomes foul with grass and weeds, as it is prone to do, before the sets come up, we often throw on another furrow of earth and harrow down. As soon as the potatoes break through the soil, we side off, weed and chop out the plants to 12 inches apart; subsequently the cultivation is the same as for the early crop, except that we cultivate more level, throwing to the plants just sufficient earth to support them. The foliage of the summer crop is *always small*, but frequently the tubers are large, well furnished with eyes and keep without sprouting until wanted for spring planting. When the crop is planted on land not manured in spring, we use muck compost; adding a small amount of guano or hen manure, and putting it *on* the sets dropped in the furrow, in lieu of *under* the sets as is the more common practice for the early crop. B.

Nansemond Co., Va., July 24, 1878.

Floriculture, &c.—July, 1878.

By W. D. Brackenridge, Florist and Nurseryman, Govanstown, Baltimore county, Md.

Lawn and Pleasure Grounds.

Last month we touched somewhat sparingly on the grouping of plants in beds during the summer months. We premised that the style called "ribbon planting" was most appropriately suited to situations near buildings, or where straight walks prevailed; and on the other hand, we thought that what is denominated "the carpet style" would find itself more at home on the surface of a broad lawn, so that the features of the design might be better comprehended, and the contrasts in various colors of flowers be less detracted from by surrounding objects. We also advocated as variety a few groups of plants of one color, while others might, if circumstances permitted, have them grouped or arranged in a promiscuous manner.

It is cheering to reflect on the rapid strides that have been made in the floral part of horticulture within the last few years; during that time hundreds of decorative plants have been brought to our notice. We refer here more particularly to what florists of the present day denominate "Bedding-out Plants," a term the boundaries to which we have found no one capable of intelligently defining; the term itself is of recent origin, and savors somewhat of the mythical, while the practice of grouping-out plants in beds and borders is an old affair—as we remember it fifty years ago; the only difference being that the variety of plants then were fewer, and of course the effect produced was less varied, yet equally as impressive, as we are prepared to show.

Then we had as early spring flowers the Hyacinth, the Crocus and Tulip; of these combined we have seen a space of over twenty acres, the various colors in different beds, arranged on the ribbon plan, blue and red, pink and white, followed by yellow; therefore when we thus reflect, we are inclined to believe that it was from the Hollander we borrowed this style of bedding out.

Then for summer we had Double Rocket Larkspurs in great variety. Dwarf Nasturtiums, Petunias—white and purple flowered; while a goodly variety of Carnations came into play, and for fall effect there was a gorgeous display of Dahlias, Cannas, Hedychiums and other tropical foliage plants of a similar character.

So, that as we said before, this out-of-door grouping of plants is not a new affair; but we are pleased to record that the progress made up to this time in bringing this branch of horticulture to its present state of perfection, must be truly pleasing to every lover of Flora.

In conclusion we would remind our readers that to show off flower beds to advantage, whether they be depressed or elevated above the surface of the lawn, the grass should be kept short, and the edging trimmed in neatly, observing also to keep the surface of the beds open by means of frequent hoeings, and giving water in dry weather, until such times as the plants in the beds cover the ground, or become well established.

Floriculture in Baltimore.

Captain Snow, in his address a month or two ago before the Maryland Horticultural Society, gave a striking sketch of the advancement made in Floriculture by the introduction and origination of new families, species and varieties, which now make our gardens and greenhouses brilliant at all seasons of the year.

That the popular taste and demand for flowers and flowering plants has kept pace with this progress, at least in and near Baltimore, seems demonstrated by the growth in numbers and extent of the commercial establishments, which supply our own people, as well as ship largely to distant points.

No less significant is the disposition, now so common among private citizens, not only to enlarge their plant-houses, but to give them features of architectural effect, for the better display of the rich treasures which they accumulate from the vegetable world. The erection of such imposing and costly structures as the conservatories recently built by Mr. W. W. Spence and Mr. W. H. Perot; the maintenance of extensive ranges like those at Clifton; the constant additions to the area of glass-houses of Messrs. Rasin and Shoemaker, and others, and the increasing number of less pretentious but no less interesting conservatories and greenhouses, both in town and country, all testify that the love of plants and flowers, and of their culture, is extending on every hand.

JOHN FEAST, THE VETERAN FLORIST.

Our purpose here is, however, to speak of the great and rapid extension in this community of the business of selling plants and flowers; and to illustrate it by some facts which we have gained from various sources.

After the war of 1812-'15, the first person in the city of Baltimore to offer for sale flowers and garden plants, was a German, by name Heuisler, who was located on the Philadelphia road, near the then city limits. Nearly cotemporaneous with him was Mr. Booth, who possessed, probably, the first nursery, occupying the ground now bounded by Baltimore and Pratt streets, and facing on Schroeder, whence were sold trees, plants and flowers. Mr. Booth died in 1817. About this date, or shortly afterwards, James Wilkes, a Scotchman, and John Bastian, a Frenchman, had establishments on Lexington street, each selling from a general collection of plants.

In 1823, Samuel and John Feast, located on the Frederick road, cultivating trees, plants and vegetables, and they were the first to offer plants for sale in the public markets of Baltimore. From this beginning the business has so grown that in every section of the city and on the roads leading into it from all directions there are commercial growers engaged in the production of plants and flowers. The number now in the trade, within the territory measured by a radius of seven miles from the City Hall, if we are correctly informed, reaches very nearly *one hundred and twenty* establishments. We have a partial list of the names of the parties now composing the trade, but from the difficulty of making it complete, we are unable to publish it, as we had in contemplation, though we may do so at some future time. It is not only in the number of florists that Baltimore has been conspicuous, but she has achieved distinction by the intelligence and zeal in the production of new and improved varieties of numerous flowers.

The well-known Prairie Roses,—Queen of the Prairies and Baltimore Belle,—were raised by Samuel and John Feast, and constituted, at that time, an entirely new class, perfectly hardy and vigorous, of fine form and color, and though lacking in fragrance, long without a rival for pillars, &c. In 1846, the Massachusetts Horticultural Society awarded to Samuel Feast its gold medal for the production of these roses,—an honor rarely bestowed.

Edward Kurtz, an amateur florist who still lives, with his zest for horticultural pursuits unabated, exhibited in 1836 his seedling Camellia Kurtzii, which was followed by numerous others, some of them of excellent form and substance, equaling many imported varieties. He also originated a number of seedling Azaleas, which probably equal any in cultivation. Some plants of these varieties, in superb bloom, were awarded at the last show of our Horticultural Society one of its Certificates of Merit, only three of which have been issued.

Zebulon Waters, also an amateur, now no more, but whose love for and knowledge of plants is well remembered, produced many fine Camellias, some of the finest of which went out with numbers only attached. His Globe Carnation and Double Scarlet Multiflora are unique.

Samuel Feast also paid much attention to the Camellia, and his Feastii, Fair Ellen, Jack Downing, Mary Edmundson, Eliza Schroeder and others, are well worthy of cultivation.

Two other Camellias of conspicuous merit were produced in Baltimore—Weaverii, a splendid red, by Joseph Weaver, and Mrs. Hammer, a fine pink, by August Hammer, an amateur.

James Pentland has made most fortunate essays in the direction both of Roses and Camellias; his Bourbon Rose, George Peabody, is equal to any of the dark sorts, whilst his Beauty of Greenmount, Woodland Margaret and Dr. Kane take rank among the best of Noisettes; and his Camellias General Lee, Stonewall Jackson and

Anna, rise high on the standard of merit. In both classes Mr. P. has under test other new productions now likely soon to see the light, one of his new roses having been lately displayed at our shows.

The tea rose Cornelia Cook, so great a fashionable favorite at present in New York and Boston, originated many years ago with Anthony Cook, a well-known florist of this city, still active in his trade.

Wm. Fowler, gardener to the late Johns Hopkins, has produced some lovely Abutilons, which are finding their way into the hands of the trade.

John Feast has long been engaged in the origination of new plants. Among many others may be noted the Epiphyllum Feastii, a Cactus of surprising size and beauty; Aloe Feastii; Camellias Mrs. Lurman, a noble variety; Annie Feast, Mrs. Tabb, and many others; Carnation Mrs. Van Cott, &c.

Charles Campbell, formerly gardener to Dr. Thomas Edmundson and now to Mr. Winans, has produced some Fuchsias and Azaleas of exquisite beauty, many of which have gone into general cultivation.

Augustus Hack, an amateur, now deceased, left behind him a collection of Camellias numbering 489 sorts, many of which he originated himself, some of them equal to any in cultivation, as May Flower, Pearl, Lizzie Jones, Eliza.

In the classes of plants more readily hybridized there have been of course many new sorts introduced from Baltimore, some of which have gone into the trade, others disappearing.

As the sole remaining representative of the early days of Floriculture in this section,—the father indeed, as we have noted above, of the plant trade, and as one whose surname has long been a household word among growers and admirers of flowers,—we accompany this article with a portrait of

JOHN FEAST, THE VETERAN FLORIST,

who is now the oldest as well as still one of the most enthusiastic lovers of plants in this community.

Mr. Feast at one time had not only the largest commercial establishment, but also, it is believed, the most extensive miscellaneous collection of plants in the country, though of late years this has much diminished by his reduction of the area of his houses by sales of ground becoming too valuable to be retained for its former purposes.

He was not only an originator, as we have seen, but a constant importer of new and valuable trees; and it is to his credit that his love for them was not limited by his desire to profit from their sale. Although ambitious to make his collection as complete as possible, his novelties as soon as propagated were willingly divided or exchanged, and we believe his enthusiasm, which continues unquenched, was far beyond the influence of mere money-making.

John Feast is by birth English, having been born in Yorkshire. At the age of 13, showing a fondness for flowers, he was sent to Lord Yarborough's, then one of the finest places in England, and at 19 he was given the charge of the Botanic Garden then owned by Miss Charlotte Pelham and devoted to the products of Flora. In 1823 he emigrated to the United States, joining his brother Samuel in business, the connection continuing until 1830, when he removed to 295 Lexington street, his present establishment.

He has been identified with all the movements in Baltimore to promote Horticulture, and numerous public institutions have had the benefit of his helping hand. He was one of the founders of the first Maryland Horticultural Society in 1830; assisted in reviving it in 1851, and was active in the organization of the present one in 1874. He took great interest in the early success of the Maryland Institute, and for many years was in its Board of Managers, a number of its exhibitions having been arranged by him with his characteristic ability to produce pronounced effects from the materials at command.

He was charged with a similar work as superintendent in the decoration arrangement of the household department of three successive agricultural societies in this State.

Mr. Feast has from time to time contributed to various publications, or read before scientific societies, papers on botanical or horticultural topics. For a number of years he contributed to the *American Farmer* a calendar of monthly operations in the flower garden and greenhouse.

In 1868 Mr. Feast received *carte blanche* from Gen. Capron, then United States Commissioner of Agriculture, to purchase in Europe trees, plants, cereals, &c., that would likely be acquisitions in this country. In the performance of the duty entrusted to him he visited England, Belgium, Prussia, Germany and France, and brought home a very valuable collection for the Government, as well as many rare and curious additions to his own stock.

In 1869, having been elected to represent his ward, the 13th, in the First Branch of the City Council of Baltimore, he was made Chairman of the Committee on Parks, in which capacity his technical knowledge and long experience were duly availed of.

Watering Pot-Plants.

Giving proper attention to watering plants has a great deal to do with raising them successfully; for no plant will thrive if allowed to suffer for water, and an excess of moisture is equally as damaging. All rules have exceptions, however, and the same treatment will not do for all plants, therefore no rule can be given that will be applicable to all. There are certain kinds of plants that can scarcely receive too much water; prominent among these is the Calla, known to almost every one. All who grow this plant know that if it is kept even moderately dry, it will not grow; then there are others that require but very little—the Verbena belongs to this class. As to when and how often to water plants, no *definite* rule can be given,—it being governed entirely by the variety and size of pot in which it is growing, together with the atmosphere. It is very apparent, that in warm clear weather all moisture in the soil will soon become absorbed. Water should always be given before the leaves wilt, or the plant will suffer an injury that will seriously retard its growth. A plant to *grow* well should have sufficient room for full develop-

ment both of root and foliage, though to *flower* them they should be allowed to become root-bound,—that is, the roots should completely fill the pot. Water plants when they *need* it, and do not wait for a certain number of days to elapse before giving it; if the pot is small and the weather warm, they will require watering once every day. Always have a hole at the bottom of any vessel in which you have plants growing, to carry off all superfluous water, as they are easily damaged by water remaining on their roots; and in watering them in winter, use, if obtainable, warm water,—as cold water will chill them. Plants in winter require a much smaller amount of water than in warm weather. When you water plants, do so in the early morning, or after the sun sets. At these times they may be sprinkled, but if it is done in midday they should be watered on the roots, and none allowed to touch the foliage, as the rays of the sun will be apt to blister the leaves and stems. There are certain people who possess so much confidence in their own judgment that they will not give up their pet ideas in regard to growing and watering plants. They *know* they put root-cuttings in water, and of course it would be folly to suppose the plants would not grow in it, and they accordingly keep the soil in the consistency of *mud*, and the result is the plants *never* thrive, and not unfrequently die, and they marvel at the occurrence and sigh over their "*luck*," but there is no "luck" about it,—it is simply a lack of sense. And then they take up an idea, that the pots should not have a hole at the bottom for drainage, and offer argument to prove the correctness of their theory, for when they water the plants the fertilizing properties of the soil must become dissolved, and if there is a hole where the water runs off, it will carry them off with it; whereas, if the pot were solid, the water would remain and so retain them in the soil, and they thereupon stop up the hole, and in a majority of cases the plants die from the roots remaining immersed in the water. To these persons the result of their own folly will in time cure them, and bring them to listen to the advice offered by those who know the reason of their plants not thriving. W. G. J.

Warwick Co., Va., March, 1878.

Quinces—Their Culture, etc.

Is it not a little singular that, amid all the enthusiasm concerning fruit, and fruit culture, the culture of the quince comes in for so small a share? How shall it be accounted for? Is it because there is an insufficient market demand? If we read the market reports rightly we find that they net the producer from $2 to $5 per bushel in the principal markets, as New York and Boston. The quince, although a native of the south of Europe, has become a naturalized shrub and fruit of the United States, and might be made a source of no inconsiderable income by a judicious system of culture. In its native home it is cultivated as a shrub or small tree. As a small tree it is ornamental, even though its outline is less regular than the prim Norway spruce and Arbor vitæ. Its foliage, beautiful pink and white blossoms, and in autumn its branches pendant with golden yellow fruit, render it at once an object of special beauty and value. Practical housekeepers are too well posted on the uses to which this too much neglected fruit may be put, to need any specific directions from my pen; it may be cooked in a variety of ways and form an acceptable, welcome dish, and when thoroughly ripened, eaten raw, they are very agreeable to the taste of many, and would be to more were the taste cultivated as for eating tomatoes.

The quince gives us but a small list of varieties, and only one or two of these are worthy of general culture for their fruit—others more for ornament. At the head of fruit varieties I would place the orange or apple quince. This is really the best quince, if not the only one worthy of culture for economy in production and cooking purposes; it cooks more tender than other varieties. The pear quince, which is grown to some extent, is very tough and hard, very unlike the orange, when cooked; but as it ripens later in autumn, it is better adapted to distant marketing or later keeping.

Propagation.

The quince is propagated from seed, from cuttings, and by layers,—the last two ways being preferable. When grown from seed, they are seldom as good as the parent. The better way, where one desires to put out an orchard, or even a single tree, is to purchase from reliable nurserymen, as they can be obtained from a shilling to twenty-five cents each, so that the expense of an orchard is small, and two years or more time is gained.

Soil and Planting.

It is a very common practice to plant the quince "bush" where we would never think of setting any other fruit tree, and this fact may account for their seeming unprofitableness, and their high price in market. The quince is as partial to a good, rich soil, well drained, as any other fruit tree, and will be found to as well repay good culture as other fruits and crops. A good, strong soil, suitable for growing good, sound corn, suits the quince. Usually it will endure as severe winters and cold as the average of apple trees, and may be planted with similar exposure or protection. One thing is very certain, that, although they seemingly like moisture, they will not thrive long in a wet soil. They may do well for a few years in such, but they are soon winter-killed, from wet feet.

In planting an orchard, trees set 14x14 feet is sufficiently near—some say 10x12—but I think that little is gained, while more may be lost by near planting; they should be kept well fertilized. Feed them if you would have fruit in abundance. Top-dress the ground annually with muck, manure, bone-dust, salt or ashes, or all composted. Cut off the ends of limbs promptly, if affected with blight of any kind; search for and destroy all borers, and use approved preventives of these depredators. By following these few simple directions you may have an annual crop of quinces which will supply you with funds to pay taxes and make "hard times" easy.—*W. H. W. in N. E. Farmer.*

Salt for Fruit Trees.

Mr. B. F. Johnson, the Illinois correspondent of the *Country Gentleman*, writes on this subject as follows:

About this date last year, your correspondent reported having made the experiment of sowing salt at the rate of nearly ten barrels to the acre, under some thirty apple trees, aged from fifteen to twenty years. Subsequently he reported the trees having made strong growth during the summer, with comparative freedom from twig blight, so general on them in previous years, and so common elsewhere the same season. At the present date, as apple orchards are bursting into bloom, he is able to report two strong, healthy trees, eighteen years planted, with twelve to fifteen inches diameter of trunk, and twelve to twenty feet spread of limbs, set full of blossoms for the first time, neither and both are bearing sorts having ever bloomed before, except in the scantiest way, both not having borne a bushel of apples; the one, and the smaller, being an Autumn Swaar, and the other a Fameuse or Snow apple. Of the other trees treated, two only absolutely refuse to show bloom, but most of them moderately—and what seems quite promising, a Red Astrachan and a Northern Spy, which bore immense crops in 1876, have blossoms enough to make as much fruit as they can well carry on to maturity. The trees look very healthy, and it would be unreasonable to refuse to believe the salt had been beneficial. But then, the year previous to the spreading of the salt, a part of these trees were treated to a light sowing on the surface under them, of wood ashes, and it is possible both the ashes and salt acting together, or the one after the other, may have produced the benefits noticed.

But I have preached the application of wood and coal ashes to the terminal roots of fruit trees too much, not to show my faith in the process by practicing it, and I have just finished the operation on twenty-seven apple trees of the size and growth before named. The operation consisted in opening a narrow trench, spade-spit wide and two spits deep, around each tree, about three feet inside of the outside of the outer diameter of the spread of the limbs, and then filling in the trenches with a mixture of about one-third soil and two-thirds such wood and coal ashes as I could gather in the alleys of a neighboring town. Having a good German hand for the work, good tools and fine weather, the cost was about twenty-five cents each tree. Under the most favorable circumstances, a small part of the benefit from the operation can be looked for before another year, and its full benefit not for two years; because the materials for a fruit crop are absorbed and stored up the year before. Moreover, it is just possible that the salt did nothing to bring about the present fruitful condition,—that being due to the exceptional character of the season, as before noted in its bearing on peaches, apples and wheat.

Nevertheless, if I had a grape vine on which fruit rotted last year, and I feared the rot again—if my pears blighted, or I dreaded its appearance—if I had apple orchards which refused to fruit, if it were not convenient, either on account of want of time, money or material, for trenching, root-pruning and applying wood and coal ashes, I certainly would, as soon as possible, sow orchard and vineyard, or a portion of both, with salt, and sow it to the extent that the ground would be grey, if not white, by the sowing. And for this reason, if salt does no good of itself, it puts other mineral matters in motion, and renders matters soluble which were not soluble before. According to Prof. Johnson (How Crops Feed, page 335), when a solution of common salt is leached through ordinary clay soil, "the soda of the salt is absorbed by the soil, while the chlorine passes through in combination with lime, potash, and magnesia." Again, the same authority, on page 374, says: "Any base brought into the soil in the form of a freely soluble salt, enters somewhat into nearly insoluble combinations, and liberates a corresponding quantity of other bases."

The salt sown under the orchard trees last April was slowly dissolved by the summer and fall rains, and, soaking into the earth, may have encountered potash, phosphoric acid, and lime, all of which have a tendency to stay near the surface. Obeying the chemical law, they started down out of the way, to give place to the soda; met the small-feeding roots of the trees, were to some extent absorbed by them, and the result was shown in increased health and vigor of wood growth and foliage immediately, and in increased fruitfulness the succeeding year.

There is a parallel of wants and demands through all created nature. For man and for all domesticated animals, and for the non-domesticated herbivora as well, the need for a certain amount of salt, over and above that found in the food, has been recognized as imperative; and there are many reasons for believing that the growth and a development of all, or nearly all, cultivated plants, would be improved if salt were geuerally used as a tonic and a fertilizer. If ten thousand tons of it were sown under fruit trees and vineyards the present year, I have no doubt the profit would, as a whole, equal $10 on every dollar expended.

Baltimore County Grange, No. 13, met June 4th at Garrison Forest Grange Hall, with a large attendance of visitors and delegates from the subordinate granges. This being the annual meeting, the election of officers consumed considerable time, resulting as follows: Master, Samuel Brady; Overseer, Thos. B. Todd; Lecturer, Chas. T. Cockey; Chaplain, Dickinson Gorsuch; Steward, Chas. W. Semmes; Assistant Steward, Aug. W. Sweeny; Treasurer, Geo. H. Merryman; Secretary, Wm. B. Sands; Gate-Keeper, B. McL. Hardisty; Ceres, Miss Clara B. Todd; Pomona, Mrs. Annie Stevenson; Flora, Miss Belle Brackenridge; Lady Assistant Steward, Miss Ella Jones. Some miscellaneous business was transacted; an abundant and handsome dinner, prepared by the ladies of Garrison Forest, was partaken of; the W. Lecturer delivered an address, (a portion of which will be found elsewhere in this issue,) and the grange closed after deciding to hold, during the early days of autumn, a public meeting and pic-nic and a show of farm stock and products, the arrangements for which were entrusted to the Standing Committee.

The Grange and the Duties of its Members.

[Read before the Glencoe Grange, Baltimore County, Md., by Sister R. S. Griffith, and ordered to be published in the American Farmer.

Nothing that we undertake can be accomplished without a will. With a determination almost anything can be done, and if grangers will they can make their own laws and control the affairs of the whole country, and it would be better if it was controlled by them, as the order is of a Christian character. It means to oppress no one, but favors the giving to all their just and honest rights.

Why should not farmers be the most independent? They are the owners and tillers of the soil, and make their living as our great Creator commanded—by the "sweat of their brow." They not only make their own living, but by their labor the whole world exists; for everything that we enjoy, either in the shape of food or raiment, is the production of mother earth. It is wickedness to oppress the tiller of the soil. We suffer oppression in consequence of having more officers now than there were in the days of our forefathers, and why should we endure this? It is only the intrigues of party men who seek fortunes at the expense of other men's labor. This evil must be crushed out, or the country will be ruined. Are we to support this? Vote a man in office and let him have a deputy to do the work while he luxuriates! If a man is not willing or competent to fill the position in which he is placed, he has no business with such an office. Farmers, where are your deputies? I think you do yourselves and families injustice by allowing others to lead you. We hear that there was a time when farmers were not educated as professional men; but that time has passed long since, and there is no reason to adhere to the old way any longer, as farmers have as much mental ability as professional men, and hence should think, work and exercise their talent for the grange. It actually looks humiliating in farmers to appeal to other men mentally. When physical labor is demanded farmers are always ready. Now is the time for the correction; interest yourselves; each one do all you can; don't wait one for the other, or the business will stand still. If all would feel that they are grangers and express an idea, it would excite an interest and would aid in the work very much.

It is the bounden duty of all, as true grangers, to do all in their power,—for we know that if we do not prosper it will be the worse for us.

Why Should I Attend the Grange Meetings?

A question of some importance is this. If no actual tangible benefit is derived it is simply a waste of time, and time is too valuable to be thus squandered. I do not doubt that there are members in every grange in the land upon whom their membership has conferred no direct benefit because they seldom or never attend the meetings.

Now I have received benefits of two kinds—direct and indirect; the latter perhaps greater than the former.

The application of the principle of combined purchases and cash payments has effected a general reduction in all the necessaries and many of the luxuries of life. In this advantage I share in common with all whether members of the order or not. Another indirect benefit is found in the high esteem in which members of the grange and perhaps other farmers hold their occupation.

When we reflect upon the wonderful changes wrought in the medical world since the days when the pulverized flesh of dried vipers was the principal ingredient in a prescription, by combinations or associate research, we will not feel surprised that like results should be realized in soil culture.

Improvements in the modes of tillage will necessarily be followed by corresponding improvement in the tillers.

The social and intellectual condition of the farmer was never so high as it is now is, his advancement in knowledge and true refinement never so rapid as now. This is a great benefit which is not confined to members of the order, but enjoyed by all who are dependent on the farmer for a living. Intelligence and skill in the farmers means bigger crops, more money, better reward for labor, more prompt payments—general prosperity. Directly, the grange benefits to me have been a better acquaintance with my brethren; a better understanding of their peculiarities of character, the dispersion of prejudices, the formation of friendships, which I trust will continue through life; and it may be some progress in self-culture. And last and least I have saved pecuniarily a trifle, which if saved by all the members would amount in the aggregate to a large sum, and throughout the whole order to many millions of dollars.

I had hoped to learn more about farming, but owing either to my inaptitude, or to the failure of the grange to discuss questions purely of an agricultural character, I have not in this respect realized my wishes.

It may be worthy to entertain the suggestion that each member should keep a note-book and enter therein any matter concerning which he may desire information or anything he may gather up in his reading or otherwise which he may think of interest and advantage to the grange.—*Fairlee Grange Garner.*

Soap.—Dissolve three pounds sal-soda in two gallons of warm water; slack in a firkin three pounds of good quick-lime; add to it the soda solution; stir the whole thoroughly with a stick, and add two gallons of boiling water; stir again and let it settle; pour off the clean liquor in a clean iron boiler placed on the fire, and stir into it six pounds of clarified grease and one pound of powdered borax; let it boil slowly until it gets ropy, (about 10 minutes' boiling,) and pour it into a tub or tight box; this makes a good hard soap for family use; after drying a month or so in a dry room, and cut into bars, it is fit for use.

Insects in the ear may be destroyed by pouring in sweet oil, olive oil or glycerine. Syringing will then remove them, and should be done early.

Home Department.

Mother-Education.

Messrs. Editors:

I feel now, as in my former communications to your paper, that I have nothing *new* to tell; but as the most effectual preaching is often that in which no new doctrine is offered, but which simply presents to the mind the truths which we already do know, perhaps the same may apply here. And the subject alluded to being dear to the hearts of all may serve to awaken a desire on the part of parents for the greater perfection of home life—a condition of things which it is the province of this portion of your journal to encourage.

We have no lack of hints upon the best way of doing the work of the house, and of raising plants and domestic animals. And as children occupy so prominent a place in the home, and consequently so much of its happiness is dependent upon the proper training of these—the *manner* of teaching as well as the substance of what they are taught—I want to say a word in favor of *mother* education and *industrial* education.

If we want our children impressed with the "importance and dignity of labor," let the mother be the teacher of her child herself. Teach them to work as well as to read, and develop the heart as well as the understanding, that "wisdom may keep pace with knowledge."

A child's earliest instinct calls for active employment, and their little minds reach after the why and wherefore of what they see around them. As soon as they can walk they are ready to begin these lessons. But how many of us *do* give to these little aspirants the consideration that is due them? Are they not often repulsed because the mother's time is absorbed in other matters? Do we reflect how much of justice, temperance and definite industry depends upon the very early training of these future men and women? Children taught at the mother's side to make and mend, to bake, to sweep and scrub a floor, are not those who in after years are going to shirk duty in whatever form it may present, but will fill with grace and dignity any position in which their chances in life may place them. If affluence removes the necessity of labor, they will have acquired that bent of mind and heart which will compel them still to work in the interest of others. Not "what does he know," but "what can he do?" is what the State asks of the young citizen who is ready to enter the arena of life. Such as these the nation has need of, and upon them will rest the progress and prosperity of society, as well as the greater delights of home.

A word more and I am through, for the soul of most sermons is brevity. Mothers! keep your children *near* you in heart and sympathy. The years are few and fleeting in which you can claim them all your own. Then let nothing deprive them and you of this choicest blessing—a child's perfect confidence and reciprocated love.

T.

Home Culture.

Notwithstanding "poor farms" and "hard times," there is open to the industrious young farmer of good habits and fair abilities as good a promise of success in life as for any other class of young men. It is a mistaken and very common idea that one who is willing to begin life in this way, is wanting in proper ambition. He does not often proclaim it, and if he did, doubtless it would seem a very modest one to his aspiring associates. Sometimes it happens, however, that those at first disposed to ridicule, in the course of time have cause to envy him. His ambition, though probably not clearly defined in his own mind, usually proves to have been a position of comfort and respectability for himself and those belonging to him. If this leads him, as it naturally would, to make of himself a good and useful citizen, gradually elevating himself and family to an acknowledged position with the true and noble among men and women, and the securing of a moderate competence for their creature comforts, who will pronounce it a mean or unworthy ambition.

It is the farmer's household, however, that claims my interest, and to his helpmeet I would offer a few suggestions, which, if the world still lies before her, may perchance make her way a little more clear. Assuming that they are agreed in their desire to get on in the world, they may take comfort in the fact that there is no obstacle in the circumstance of their vocation: an advantage over some others, notwithstanding our boasted democracy. Possessing the requisite personal qualifications, they may take rank among the highest dignitaries of the land without resigning, or ignoring, that which has afforded them the means of acquiring their position, and may also enable them to maintain it.

Home is an important stepping-stone in the way of most men's elevation socially, or else a clog and hindrance;—therefore, it should from the beginning possess the elements of what is aimed at for its future. Where economy degenerates to meanness, industry to drudgery, the portion of the house in every day-use the least inviting, and the domestic habits boorish, there is small chance for advancement.

Acres may multiply, and the bank-account grow, fine houses, fine furniture, fine dress and showy equipage be the result, but the coveted position of respect and honor in the community will not be established. Many parents quite susceptible of self-culture and refinement are careless of these things in their eagerness to get on,—and thus missing the key-note, live to see their children, whom their labor and self-denial have afforded advantages of education away from home, possibly reaching positions of distinction among men, but with only their natural instinct to attach them to their early home or their parents.

Care must be taken in the days of small beginnings, that home in all its features is the best expression of ourselves; it will naturally follow that home improvement and self-improvement will go hand in hand. A tasteful, pretty home, made so by the genius and skill of its occupants rather than extravagant outlay of money; habits of kindly courtesy among the

members of the home circle; due observance of the requirements of polite society in all the domestic arrangements, (in other words the every day use of company manners,) will secure us refined and cultivated associations, and develop an ease of manner and address in general society which nothing else will.

With a home training such as this and a moderate share of school education, with brain-food well selected always at hand, our country boys and girls will labor at no disadvantage when they appear in general society, and moreover will be ready to adapt themselves to whatever our improved circumstances or the condition of their own manhood or womanhood may require of them. Common sentiment very properly makes the wife and mother responsible for these things, and in view of this she is wise if she so shapes her home life at the outset that she will have nothing to undo. It is easier then to gain her husband's sympathy and co-operation, especially if her ideas are based upon common sense and carried out in such a way as to increase rather than interfere with home comfort. CERES.

Domestic Recipes.

TO BOIL POTATOES.—Let the potatoes be of a size: do not put them in the pot until the water boils; when done pour off the water and remove the cover until all the steam is gone; then scatter in half a teaspoonful of salt, and cover the pot with a towel. By adopting this plan, watery potatoes will be mealy.

YEAST THAT WILL KEEP FOR MONTHS.—Boil six large potatoes in a gallon of water with a handful of hops; when soft mash through a colander; add one teacup white sugar and one of salt; when sufficiently cool, add half teacup of yeast; rise and bottle; no flour is added, as that makes it sour.

ANOTHER RECIPE FOR YEAST—WILL KEEP THREE MONTHS.—Put two ounces hops into one gallon and one pint water, boil half an hour, strain hot and dissolve two ozs fine table salt and half lb. white sugar in the liquor; when milk-warm, put one lb. sifted flour into a basin, make a hole in the centre and add the liquor by degrees until well-mixed; set on a stool by the fire day and night in winter; in warm weather this is not necessary. In the morning boil and wash fine three lbs. of potatoes and mix in the liquor; next morning there should be a thick dark scum on the top. Stir thoroughly and strain into a gallon jug, cork tight and tie down; put in a cool cellar; shake before using.—*Fairlee Garner.*

COTTAGE PUDDING.—One pint of flour, one and a half teaspoonfuls Royal baking powder, one cup milk, one cup sugar, two eggs; bake 20 minutes. Sauce—One cup butter, one cup sugar, half cup bourbon, one egg; to be mixed over boiling water.

MIXTURE FOR CLEANING SILVER.—Common prepared chalk, or whiting, ½ lb.; gum camphor, ½ oz.; aqua ammonia and alcohol, of each, 1 oz.; benzine, 3 oz.; mix well together, apply with a soft sponge, and allow it to dry before polishing.

About Rugs.

To make one that is both handsome and durable, select a stout brown bag, or coffee sack; cut it the required size, and put a hem an inch wide all around. Sew it firmly into a frame made of laths for the purpose or into quilting-frames. Then with a strong crochet needle, work into it strips and scraps of worsted goods, hooking them through and drawing them tight on the under side, and leaving them looped ¾ inch on the right side.

Arrange the colors according to fancy—in squares, stripes, flowers, or figures—and when the whole surface has been worked over, shear it with a pair of sharp scissors, leaving the nap half an inch long. If the material used is worked closely into the foundation and the colors made to harmonize, the finer will be the result. One not less pretty and durable, and with much less trouble, can be made by cutting and sewing the strips as for a carpet, and crocheting them into oval or square mats. If the pieces are cut bias the effect is like chenille. Forty stitches in the centre, widening six stitches at each curve, makes a square rug of right proportions to lay before the sofa. In making rag carpets, if the best pieces are laid aside and used in this way, they will be found useful and ornamental on the bare floors in summer, and a great protection to the carpets in winter. There are many other styles of home-made rugs, and we hope some one having experience will enlighten us as to *how* they are made. T.

Cure for Wounds.

As soon as the wound is inflicted get a little stick—a knife or file-handle will do—and commence to tap gently on the wound. Do not stop for the hurt, but continue until it bleeds freely and becomes perfectly numb. When this point is reached, you are safe—all that is necessary is to protect it from the dirt. Do not stop short of the bleeding and the numbness, and do not, on any account, close the opening with plaster. Nothing more than a little simple cerate on a clean cloth is necessary. We have used and seen this used on all kinds of simple punctures for thirty years, and never knew a single instance of a wound becoming inflamed or sore after treatment as above. Among other cases: A coal-rake tooth going entirely through the foot, a bad bite by a pig, several instances of file-shanks through the hands, and numberless cases of rusty nails, awls, etc., but we never knew a failure of this treatment.—*Scientific American.*

A lady writing to the *Germantown Telegraph* gives some excellent counsel on a matter which affects every woman who does her own housework: "Never stand when you can do your work as well while sitting. Every housekeeper and every mother should heed this. Have a variety of seats of different heights from the low cricket to the office stool of moderate height. It is a matter not only of comfort but of health.

The American Farmer.

PUBLISHED ON THE FIRST OF EVERY MONTH

By SAML. SANDS & SON,

At 128 W. Baltimore Street, (sign of the Golden Plow,) Baltimore, Md.

Wm, B. Sands, Proprietor.

Saml. Sands, Wm. B. Sands, } Editors and Publishers.

SUBSCRIPTION, $1.50 a year, in advance. To Clubs of five or more, $1.00 each. For $10, eleven copies will be sent.

ADVERTISING RATES.

	1 *Mo.*	3 *Mo.*	6 *Mo.*	1 *Year.*
One Square, 10 lines.....	$ 1.50	$ 4.00	$ 7.00	$ 12.00
Quarter Page.....	6.00	15.00	22.50	35.00
Half Page.....	12.00	25.00	40.00	70.00
One Page.....	20.00	45.00	75.00	120.00

Cover Pages subject to special contract.
Transient Advertisements payable in advance—all others quarterly.
Advertisements should reach us by the 27th of the month, to secure insertion in the succeeding issue.

BALTIMORE, JULY 1, 1878.

New Advertisements.

Col. H. P. Underhill offers again the old and tried favorite, the Bickford & Huffman Grain Drill, improved for the coming season by new devices, which bring it nearer to perfection than ever. One of these is the elevation of the fertilizer-stirrer feet, by which the draft of the drill is materially reduced. Another feature now added is a land-measurer, an attachment which will add to the completeness and usefulness of the machine.

Mr. Jno. C. Durborow introduces to notice here the "Superior" Drill, an implement already widely known in the West, and whose merits, it is claimed, are such that it will make many friends in the East.

Messrs. Palliser, Palliser & Co., advertise a work on architecture, which all of our readers who have any intention, direct or remote, of building a house or barn, would do well to possess themselves of. These gentlemen have contributed to our pages several plans for country residences, which bear testimony to their skill and taste. The cost of their handy volume would be many times saved by the suggestions which it contains, and indeed, as a rule, the money paid for the advice and drawings of a competent architect, when a building is to be erected, is generally wisely and profitably expended.

☞Special attention is called to the advertisement of the school for girls at Rockland Farm. This is the school long conducted by Mrs. Miller, and under the capable direction of Mr. Hallowell and his experienced assistants, it will doubtless maintain its high character.

☞ Removal.—Messrs. Bonnett Bros. have removed from their old stand to the corner of Forrest and Hillen Streets, where they invite the attention of farmers to their general stock of hardware, iron, steel, axles, springs, &c.

The Native Flowers and Ferns of the United States.

Messrs. L. Prang & Co., of Boston, have begun the publication of a work bearing this title, edited by Thomas Meehan, and illustrated by chromo-lithographic plates prepared for it from drawings and paintings made especially for it by an accomplished artist.

The design of the work is not only to illustrate faithfully the Flowers and Ferns of the United States, but in the letter-press to discuss them fully in three aspects, namely—*botanically*, giving descriptions, references to standard works, and treating in popular language of the plants' physiology and structural peculiarities; *horticulturally*, by directing attention to the adaptation of wild flowers for cultivation, with hints towards their improvement; and *popularly*, by pointing out the poetical and legendary associations of plants, &c.

Of the abundant qualifications of Mr. Meehan to make this a valuable and entertaining work, none can doubt who know his reputation for ability in the several fields he proposes working, and the well-known enterprise and skill of the publishers will assure a high standard of mechanical and artistic perfection. The parts already issued show this.

The work will be published in series, each complete in itself. The first series will make two volumes, composed of 24 parts, each part consisting of 4 colored plates and 16 pages of text. Subscriptions will be received only through agents, who will deliver the parts, one of which will be issued every two weeks, and the price will be 50 cents each part.

A Good Sale of Jerseys.

On the 21st May an importation by Mr. Fowler, of Jerseys, consisting of 25 two-year-olds, (all females,) and three young bulls and one cow calf, sold for $7,700; the bull calves bringing from $30 to $50, and the others from $150 to $490. One cow calf only two weeks old sold for $160. The sale was in New York.

Jersey Cattle.

A Delawarean in Indiana.

The plate on a following page gives correct and well-executed portraits of three Jerseys, from the "Beech Grove Farm" of Messrs. Churchman & Jackson, Indianapolis, Ind.

The bull, One Ton (so named from his number—2,000—in the herd Register of the American Jersey Cattle Club) is said to be a remarkably fine specimen of his race. His color is dark on the neck and shoulders, with a shade of light squirrel gray from the shoulders to the tail. The cow Roma 1< a solid squirrel gray, with black switch, now in milk with her first calf. The calf is solid color with black points.

Messrs. Churchman & Jackson have a herd of so high merit as to give it a conspicuous place amongst those of the West, and they are not content with present achievements, but seek to further increase its reputation by the addition of other animals of real value.

We recognize in the junior of this enterprising firm the son of our old friend, Bryan Jackson, of Delaware, who will be remembered by many of our readers as the genial agriculturist whose attendance in former days at the State fairs of Maryland, with his splendid sheep, to compete with our breeders and those of Virginia and his own State, was always hailed with pleasure. How many of his competitors of those days with our friend Jackson have, like him, left this stage for a better life! Well do we remember the pleasant time we spent in Delaware, under the hospital roof of old Bryan, with many of the very elite of the agriculturists of the Diamond State. In a business note of Mr. Geo. Jackson, whose acquaintance we made at his father's residence, when George, if we remember aright, had the general charge of the stock, he says: "I remember very well the intimacy between Mr. Sands and my father; it was of a very agreeable nature. Have known the *American Farmer* ever since I can remember."

Mr. Jackson writes us:

"I sail for England on the 'Montana,' Inman line, on July 2. The importation of Jersey cattle we contemplate making will be one of the largest ever made by a private breeding establishment in this country (if we can get the quality we want.) Upon my return, will offer some of them for sale. Col. Waring, secretary of A. J. C. C., has gone over, and I expect to meet him on the Island. I hope to arrive in England in time to see the Royal Show of England, at Bristol. A fine collection of Jersey cattle will be there amongst the many other attractions.

"I expect to take a herd of Jerseys to the great St. Louis fair in October."

An Excellent Appointment.

The United States Commissioner of Agriculture has appointed Prof. C. V. Riley, late State Entomologist of Missouri, to be Entomologist of the Department of Agriculture, vice Townend Glover, resigned. Prof. Riley is a thoroughly practical and experienced entomologist, whose efficient work in the past will commend him to the confidence of our farmers, already his debtors for his intelligent research and timely descriptions of their insect enemies.

We learn with deep regret that our old friend and teacher, Mr. Glover, who has filled the position now assumed by Prof. Riley since the establishment of the Department of Agriculture, has br›ken down in health. One of the most indefatigable workers we have ever known, this result is not to be wondered at, but we trust his retirement from the pressure of his official duties will soon restore him to his wonted health and activity. The museum of the department, which was designed and created by him, will be a monument to his industry and devotion.

The McGinnis Harrow.

We are glad to learn that this excellent implement is gaining many friends in Kentucky by the effectiveness of its work. We find in the *Southern Agriculturist* the following notice of it: "A number of prominent and successful farmers in Kentucky have tried Capt. McGinnis' harrow, and give it the strongest endorsement. This harrow will pulverize, cultivate and yet leave the land level—just one of the implements that should be introduced into Kentucky."

Georgia Agricultural Department.

We have received the monthly report for May, from Mr. Commissioner Janes, giving a general outline of the condition of agriculture in that State at the close of the month—which, we are glad to find, is on the whole decidedly favorable. Speaking of the oat crop, the Commissioner says it has not entirely escaped rust, but in a large majority of cases "no rust in oats" noted, "and it is quite probable that in nearly if not quite all these cases, the variety sown was the red or yellow rust-proof oat." He adds that this variety of oats is all that is claimed for it—practically rust-proof. He advises early fall sowing, as it is found the damage done is mainly in the winter or spring sowing:

Of the wheat crop, the report says: "The "Nicarauga," a variety introduced several years since by Mr. C. D. Black, of Campbellton, has

again vindicated its claims as a rust-proof wheat. It has not rusted in the last six years. The "Early Red May," the "Purple Straw," and the "Rainey," are also mentioned by reporters as having escaped the rust. The last named is a small grained, very early, white variety—the result of careful selection by Hon. T. F. Rainey, of Ellaville, Georgia. The average yield in the State is 87,—13 per cent. below an average—about the same last year; but as the acreage was 18 per cent. greater than in 1877, it is safe to say that the aggregate yield is materially greater. Those farmers who seed wheat on hand of the varieties named above, or others that have uniformly escaped rust, will benefit the public, as well as themselves, by reserving and offering for sale their entire crops."

Of sheep and wool it says:

"There was an increase in the clip of wool of 2 per cent. over last year. The report shows that 8 per cent. of stock of sheep were killed by dogs, and 3.5 per cent. died of disease in the last twelve months. This loss of 8 per cent. by dogs, though still leaving a very large margin of profit, has the effect to prevent investments in sheep, and thus keep this most profitable branch of husbandry constantly in the back ground. There is now no constitutional obstacle in the way of such legislation for its protection as has long been needed, and if the farmers of the State desire such legislation their wishes should be made known to their representatives."

DOVER, *June 20th*, 1878.

Messrs. Editors American Farmer:

The Delaware State Fair will commence on the 24th of September, and continue five days. To be held at the State capital, *Dover*.

Yours respectfully,

WM. H. WALLACE, *Secretary*.

Messrs. Voss Brothers offer Peruvian guano, of direct importation, in lots to suit, ready for the drill, and analysis guaranteed.

The American Association of Nurserymen, Florists and Seedsmen held its annual meeting in Rochester, N. Y., on the 19th ult.

The Vegetable Garden—July.

Such spaces in the garden as are left bare by the removal of the earlier crops ought to be filled by later ones, such as cabbage, spinach, turnips, &c. The remnants of former crops ought to be removed to the compost heap, and weeds should no more be allowed to disfigure the garden now than earlier in the season. On rich ground beans may still be sown, and pickling cucumbers ought to be put in at once. The early planting of celery will be ready for the first filling up, and caution must be used to prevent the earth getting into the hearts of the plants, as this produces rust. The later crops, if the season proves dry, are much benefitted by watering. Cabbage and cauliflower should be kept well-worked, and the earth drawn up to them. Corn may still be planted for a late crop. Keep all kinds of root crops well worked.

Seeds for a Lawn.

The horticultural editor of the *Prairie Farmer* recommends the following mixture of seeds for a lawn not to be often and closely mown:

Sweet-scented vernal, one pound; meadow fescue, meadow foxtail, hard and sheep's fescue, and rough-stalked meadow grass, each two pounds, may be added to ten pounds of blue grass, four pounds of white clover, and six pounds of red top. This will give thirty-one pounds as mixed, a fair sowing per acre. To this you may add one pound of yellow oat grass, and two pounds of perennial red clover if you like. It will not be too much. Forty pounds per acre is often used and with the best results, since a thick sward is the beauty of the lawn and thin sowing always leaves bare places which, if not occupied by weeds, never fill perfectly. The time to sow is as soon in the spring as the land may be made ready.

Sheep Husbandry.

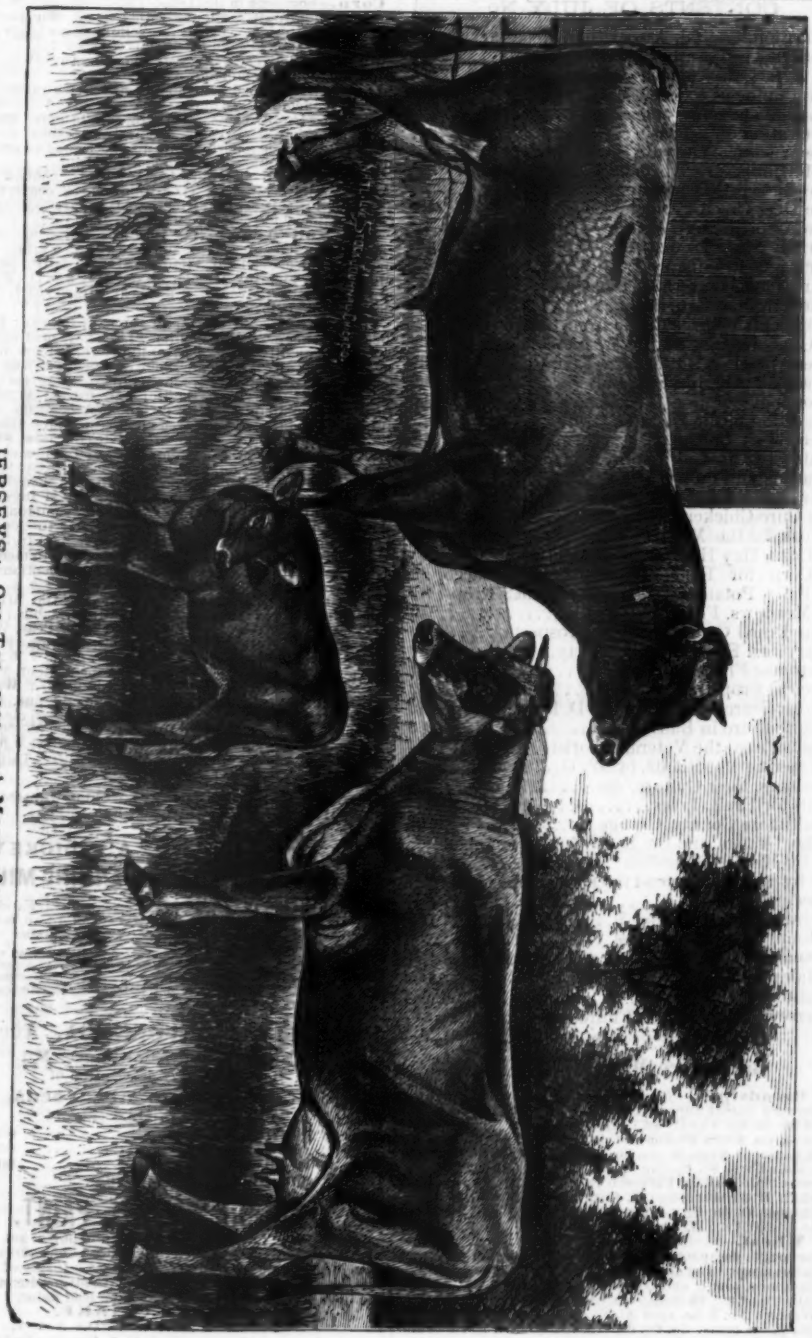
Col. Tom. Crutchfield, of Chattanooga, Tenn., in an article written for a work on sheep husbandry, now being prepared by the Commissioner of Agriculture of Tennessee, makes the following suggestions about the care he devotes to his flock:

"Annually, at shearing time, I cull my flock, and take out all ewes and lambs that are less perfect in form and fleece, or in any respect inferior, and place them with the mutton sheep, keeping to breed from none but the best.

"I give my flock good attention. They have access to an open shed, and salt all the time. I change their grazing ground often, and endeavor to keep them in *uniform* condition, as that makes uniform wool. Any sudden change from a fat to a poor condition, and *vice versa*, strengthens or diminishes the fibre of the wool, which detracts greatly from the fibre of the wool, frequently rendering the long wools valueless as combing wool. If the sheep becomes poor when the fleece is about half grown, and then fatted, the wool inevitably tells it, as at that point where the poverty of the sheep was shown, so will it be shown in the wool, being much weaker than the other portions of the fibre grown while the sheep was in good condition; this same cause, as also any other cause from which they may have had fever, will cause them to shed their wool. I have heard it said that the feeding of corn to sheep made them shed their wool. No doubt it is true—as the corn brought them rapidly from poverty to flesh—the sudden change causing the shedding of wool, which rightfully is attributed to the corn."

New Advertisements.

Henry C. Hallowell.—Rockland School for Girls.
H. P. Underhill.—Bickford & Huffman Grain Drill.
Jno. C. Darborow.—"Superior" Grain Drill, &c.
Cromwell & Congdon.—Trees for Fall Planting.
Cromwell & Congdon.—Cabbage and Celery Plants.
Cromwell & Congdon.—The Dickey Fanning Mill.
R. W. L. Rasin & Co.—Fertilizers for Wheat.
Voss Brothers.—Peruvian Guano.
Palliser, Palliser & Co.—Model Homes
M. W. Shipley.—Farm, Grist and Saw Mills for Sale.
Wm. J. Schofield Jersey Male Calf for Sale.
Wm. H. Perot.—Jersey Bull Calves.
D. F. Beatty.—Pianos and Organs.



JERSEYS: One Ton, 2000, and More, 4834.

The property of CHURCHMAN & JACKSON, "Beech Grove Farm," Indianapolis, Ind.

CONTENTS OF JULY No.

Education, Capital, Association, Necessary to Success in Farming, by C. T. Cockey.....229
Mr. J. B. Lawes on Nitrogenous Manures.....231
The Lupine as a Green Manure..... 232
Home-Made Super-phosphates.....233
Cultivation of Wheat.....234
The Washing Away of Plant-Food, by L. H. McGinnis 235
The Enterprise Club, by N. E. D.....237
The Deer Creek Farmers' Club.....238
The Assorting of Tobacco—Does it Pay? by J. M. Baker.....240
Facts and Results, by Rustic 241
Our French Letter 241
The Virginia State Show.....242
Shipments of Live Cattle from Baltimore...242
A Good Jersey Cow, by W. J. Scofield.....243
Great Yield of Butter from Five Cows.....243
Sheep-Raising in Maryland.....244
Profits of Sheep.....245
Digestion in the Horse 245
Veterinary College.....245
Paint for Out-door Work.....245
Seasonable Poultry Hints.....246
Vivary—Duck, Fowl, Pigeon—Jno. H. King..246
To Cure Chicken Cholera.....239
Work for the Month—Wheat, Cultivation of Corn, Hay Harvest, Millet and Hungarian, Corn for Fodder, Buckwheat, Tobacco, Fall Potatoes, Turnips, Root Crops, Meadows, Fences, Live Stock.....249
The Peach Country—Crop Prospects.....249
Maryland Horticultural Society.....251
Potomac Fruit-Growers.....251
Second Crop Irish Potatoes.....252
Floriculture for July, by W. D. Brackenridge.252
Floriculture in Baltimore.....253
John Feast, the Veteran Florist 254
Watering Pot-Plants, by W. G. J.....254
Quinces, their Culture, &c.....255
Salt for Fruit Trees.....256
Baltimore County Grange.....256
The Grange and the Duties of its Members, by Miss R. S. Griffith.....257
Why Should I Attend the Grange Meetings?.257
Recipe for Soap.....257
Mother Education, by T.....258
Home Culture, by Ceres.....258
Domestic Recipes 259
Making Rugs, by T.....259
Editorial Notices, &c.....260, 261
Jersey Cattle of Mess. Churchman & Jackson.261

Baltimore Markets—June 31.

Breadstuffs.—*Flour*—Dull and heavy. We quote: Howard Street Super $2.50@3.25; do. do. Extra $3.50@4.50; do. do. Family $4.75@5.25; Western Super $2.50@3.25; do. Extra $3.50@4.50; do. Family $4.75@5.25; City Mills Super $3@3.50; do. do. Extra $4@4.50; do. do. Rio brands Extra $6; Spring Wheat Flour $4.75@5.25; do. do. patent $5.50@6.50; Patapsco Family $6.75; Fine $2.20@2.37; Rye Flour $3@3.25; Corn Meal, City Mills ₱ brl. $2.65@2.80; do. City Mills ₱ 100 lbs. $1.25; do. Western do. $1.10@1.15; Western Corn Chop $1.

Wheat.—Southern dull and weak, with heavy decline for tough, damp lots, with no demand from shippers, and little competition among millers. We quote: Southern Red, new, tough and common 70@85 cents; do. do. do. fair to prime $0.90@1; do. Amber, choice $1.03@1.05; Western No. 2 do. spot $1.05; do. do. do. July delivery 98¼@98⅝ cents; do. do. do. August do. 97¼@97⅝ cents; do. do. do. September do. 97⅛@98.

Corn.—Southern in light supply and nominal. Western in moderate demand, and rather firm. We quote: Southern white 57@58 cents; do. yellow 47 cents. Western steamer, spot 40½ cents; do. mixed, spot 44½ cents; do. do. July delivery 44⅝ cents; do. do. August do. 46 cents; do. do. September do. 47@47¼ cents.

Oats.—Are in good demand and firm, with rather an upward tendency. We quote: Western mixed 33 cents; do. bright 34½@35 cents; Southern, fair to good 32@33 cents; do. prime 34@35 cents; Pennsylvania 30@32 cents.

Rye.—No sales reported, but we quote good to prime at 54@56 cents ₱ bus., with the market firm.

Cotton.—Dull and only barely steady, though we quote as follows for spots viz: Middling 11¼ cents; Low Middling 10⅞@11 cents; Strict Good Ordinary 10⅝ cents; Good Ordinary 10¼@10⅜ cents.

Hay and Straw.—Hay is scarce and firm, with the receipts and stock light, and Straw is also firm. We quote: Choice Cecil Co. Timothy $14@15; fair to prime Md. and Pa. Timothy $11@13; mixed Hay $9@11; Western do. $10@12; Clover do. $; Wheat Straw $6@7; Oat do. $8@9; Rye do. $9@11.

Live Stock.—Prices range about as follows: Best Beeves $4.87@5.65; first quality $4.62@4.87; medium or good fair quality $3.62@4.62; ordinary thin steers, oxen and cows, $3@3.62; extreme range of prices $3@5.65.

Tobacco.—Receipts are moderate. We revise quotations, viz: Maryland inferior and frosted $1.50@2; do. sound common $2.50@3; do good $3.50@5; do. middling $6@7; do. good to fine red $8@10; do. fancy $10@15; do. upper country $4@20; do. ground leaves, new, $2@8. Ohio—inferior to good common $1@4.50; do. greenish and brown $4.50@6; do. medium to fine red $6.50@9; do. common to medium spangled $6@8; do. fine spangled to yellow $10@15. Kentucky—common to good lugs $3@$5.50; do. Clarksville lugs $3.50@6; do. common leaf $5.50@6.50; do. medium leaf $7@8; do. fair to good $9@$12; do. fine $12@14; do. selections $14@16. Virginia—common and good lugs $3@5.50; do. common to medium leaf $6@8; do. fair to good leaf $8@10; do. selections $12@$16; do. stems, common to fine, $1.50@2.

Produce.—We quote as follows for the articles named below, viz: Beans—N. Y. medium, ₱ bus., $1.75@$1.80; Peas, black-eye, ₱ bus., $1.30@1.40; Peas, Western green, ₱ bus., $1.15@1.20; Potatoes, new, ₱ brl., $1.60@1.75; Onions, ₱ brl., $1@1.50; Beeswax, ₱ lb., 25@26 cts.; Ginseng, ₱ lb., 90 cts.@$1; Seneca Root, ₱ lb., 55@60 cts.; Virginia Snake, ₱ lb., 10@12 cts.; Wool—unwashed, coarse, ₱ lb., 25@26 cts.; do. do. fine, ₱ lb., 22@24 cts.; do. tub washed, coarse, ₱ lb., 33@36 cts.; do. do. fine, ₱ lb., 32@35 cts.; do. fleece-washed 35@36 cts.; Feathers, ₱ lb., 40@45 cts.; Hides—dry country, ₱ lb., 13@15 cts.; Sheep's Pelts, each, 50 cts.@$1.50; Tallow—country, ₱ lb., 6¼@7 cts.

THE BEST FANNING MILL IN THE WORLD. OBTAINED CENTENNIAL AWARD AND GRAND MEDAL.

BUY THE

A. P. DICKEY FANNING MILL

No good Farmer can afford to market dirty grain.

A medium quality well cleaned brings a better price than the nicest grade sold in dirty condition.

CROMWELL & CONGDON, Agents,

51 Light Street, Baltimore, Md.

Dealers in every description of

Agricultural Implements, Seeds, &c.

CASH PRICES FANS:

No. 1, 24-Inch Sieves	**$27.00**
**No. 2, 22-Inch " **	**$25.20**
**No. 3, 30-Inch " **	**$31.50**

Trade supplied at liberal discounts.

ENGLISH SILICATE PAINT.

A *substitute* for White Lead. Is non-poisonous. Has double the covering capacity of lead. Is not affected by gas of any kind, nor blistered by heat. Inside of buckets or any vessel can be painted without producing any bad effect in taste, or danger, as from lead paint.

WM. WIRT CLARKE,
WHOLESALE AGENT,
61 S. Gay St., Baltimore.

PLASTER.

No. 1 FINE GROUND AGRICULTURAL PLASTER,—for sale in bulk, bags or brls. In cargo lots or less, at LOWEST MARKET RATES. CALCINED PLASTER for Building purposes.

WM. WIRT CLARKE, Manufacturers' Agent,
61 S. Gay Street, Baltimore.

Piano Beautiful Concert Grand Pianos, cost **$1,600** only **$425.** Superb Grand Square Pianos, cost **$1,100** only **$255.** Elegant Upright Pianos, cost **$800**, only **$155.** New Style Upright Pianos, **$112.50.** **Organs $35.** Organs, **12** stops, **$72.50.** Church Organs, **16** stops, cost **$390**, only **$115.** Elegant **$375** Mirror-top Organs, only **$105.** Tremendous sacrifice to close out present stock. **Immense** New Steam Factory soon to be erected. Newspaper with much information about cost Pianos and Organs **SENT FREE.** Please address **DANIEL F. BEATTY,** *Washington, N. J.* **Organ**

Sold on trial and guaranteed cheaper, at its price, than any other Hay press as a gift or no sale. Don't be swindled by irresponsible manufacturers of infringing machines, as the purchaser is liable. It costs no more for a good press than an inferior or worthless one. Address, P. K. DEDERICK & CO., Albany, N. Y.

Agents Wanted for our Illustrated FARMERS' AND MECHANICS' MANUAL

By Geo. E. Waring, Jr.,

Author of "Draining for Profit and for Health," and late Agricultural Engineer of N. Y. Central Park.

This is the King of Lightning Calculators and Ready Reckoners. It is not a Cook book, but 2,000 facts of universal application for WORKING-Men of every trade, and is worth its weight in gold to Capitalists, Students and every Library. The *N. Y. Tribune* says: "It is a sound, honest, instructive publication, doing all it professes to do, and more."

562 pages, 652 Superb Illustrations, for $2.75, a marvel of cheapness, beauty, and rapidity of sales. 25th thousand. A single agent sold over 1,500 copies in one county in New Jersey.

E. B. TREAT, Publisher, 805 Broadway, N. Y.

OUR IMPROVED PEST POISON

is a SAFE, sure and cheap destroyer of the **POTATO BUG,** Currant Worm, and all Insects that Prey on Vegetation. Warranted to kill Five Bugs where Paris Green kills ONE, yet it is SAFER TO USE, and is not injurious to plants. Costs only 25c. to 50c. per acre. ¼-lb box sent free by mail for 30c. Send for circular with hundreds of testimonials.

Our Cabbage Worm Destroyer

is NOT AT ALL POISONOUS, but sure death to the worm. Sample for trial sent free on receipt of 15 cents. POSTAGE STAMPS ACCEPTED. Discount to the Trade. KEARNEY CHEMICAL WORKS, J. R. DEY, Agent, P. O. Box 3139. Office, 66 Cortlandt St., New York.

Farm, Grist and Saw Mills for Sale.

In Howard Co., Md., 19 miles on Frederick Pike; about 108 acres. The owner, from an injury to his limbs, desires to sell it as it stands, including valuable stock, crops, &c., a full description of which is left at the office of the AMERICAN FARMER, where terms will be made known. This offer is worthy the attention of any one wanting to locate himself with everything at hand. The Mill alone now rents for the interest of two-thirds the whole sum asked for the entire property. Apply to

M. W. SHIPLEY,
Friendship, Howard Co., Md.

Rockland School for Girls,

Sandy Spring, Maryland.

This institution will be opened September 16th, 1878. It will be conducted on the same principles and with the same assistants as the Stanmore School, which my sister, Caroline H. Miller, has concluded to relinquish. A full course of instruction, with lectures, will be given. For circular, with terms and other particulars, address

Henry C. Hallowell, Principal.

CABBAGE
— AND —
CELERY PLANTS.

Flat Dutch Cabbage	30 cts. per 100, $2.00 per 1,000
Drumhead	30 cts. per 100, $2.00 per 1,000
Grant White Solid Celery	60 cts. per 100, $4.00 per 1,000
Dwarf " " "	60 cts. per 100, $4.00 per 1,000
Purple-Top Turnip Seed	40 cts. per lb., 10 lbs. $3 50
Purple-Top Ruta Baga	65 cts. per lb., 10 lbs. $6.00

CROMWELL & CONGDON,

51 Light St., Baltimore, Md.

JERSEY BULL CALVES!

Pure Bred—Solid Colors.

Black Points. Apply to

W. H. PEROT,
25 SOUTH GAY STREET.

JERSEY MALE CALF FOR SALE.

(Can be registered) out of my 13-lb. cow Juno; (H. B. 6,413;) sired by Huguenot (H. B. 784.) No. 1 Butter Stock. Huguenot was bred by J. Stricker Jenkins, Baltimore. Calf 2 months old. Price $25 if taken soon.

WM. J. SCOFIELD,
Sandy Spring, Montgomery Co., Md.

Dr. FRANK S. LEWIS,
DENTIST,

S. E. Cor. Green and Saratoga Sts.

BALTIMORE, MD.

☞ NITROUS OXIDE GAS ADMINISTERED.

CEMENT.

ENGLISH PORTLAND for artificial Stone Work and out-door Walks, Kitchen and Wash-room Floors.—AMERICAN CEMENT for Cisterns, Masonry, &c.—CALCINED PLASTER for building purposes.

WM. WIRT CLARKE, *Importer & Manufacturers' Agt.*
61 S. Gay Street, Baltimore.

FENCING and BUILDING MATERIALS.

The subscriber will cut and sell to farmers and others, CHESTNUT and RED-OAK TIMBER. Farmers of Maryland and Virginia, convenient to navigation from his farm, will find it to their interest to place themselves in communication with

WM. H. JESSE,
LITWALTON, Lancaster Co. Va.

DAMP WALLS

CURED by the application of English Petrifying Liquid, and inside walls that are damp can be papered on at once. *Leaky Cisterns* can be effectually cured. *A fresh importation on hand.*

WM. WIRT CLARKE, 61 S. Gay St., BALTIMORE.

FOR SALE!

FARM in Howard Co., 19 miles from Baltimore and ¼ mile south of Frederick Pike and adjoining Hayfield Mill. Containing 129 acres, good dwelling, Barn and other out-buildings. Fruit of all kinds, pasture, &c. Terms to suit. For particulars apply to

J. S., Care of American Farmer.

PALLISER'S MODEL HOMES.

New Edition.

100 pages, 30 plates 5x8 inches, giving 30 designs for Model Cottages, Farm and Country Houses, Farm Barn and Hennery, Stable and Carriage House, School House, Bank and Library, Masonic Association Building, Town Hall and three Churches, together with descriptive specifications and a large amount of miscellaneous matter, making a very valuable book for every one intending to build. Price $1. For sale by all booksellers, or sent postpaid by the publishers.

Palliser, Palliser & Co., Architects.
BRIDGEPORT, CONN.

$5 to $20 per day at home. Samples worth $5 free. Address STINSON & Co., Portland, Maine.

PERUVIAN GUANO.

We have now on hand a large stock of No. 1 Peruvian Guano, "Lobos," with the following analysis guaranteed:

Ammonia	**6 per cent.**
Bone Phosphate of Lime	**40 "**
Potash	**4 "**

The Guano is perfectly dry, entirely free from lumps, and ready for the drill without any labor whatever. Purchasers will please see that the bags have Hobson, Hurtado & Co.'s name stamped on them, they being the only Agents of the Peruvian Government.

VOSS BROTHERS,
jy-3m **No. 42 Second Street, Baltimore, Md.**

Trees For Fall Planting.

At our **PATAPSCO NURSERIES** we have a large and select stock of **APPLE, PEAR, PEACH, CHERRY** and **PLUM TREES**, both standard and dwarf. **APRICOTS, NECTARINES, GRAPE VINES, BLACKBERRIES, RASPBERRIES, CURRANTS, GOOSEBERRIES, STRAWBERRIES, &c., &c.,** in great variety. Also a LARGE AND CHOICE COLLECTION of

SHADE TREES,

Consisting in part of **NORWAY, SUGAR, SYCAMORE, SCARLET, ASH-LEAVED and SILVER MAPLES, LINDENS, POPLARS, HORSE-CHESTNUTS, WHITE** and **CUT-LEAVED BIRCH, &c., VINES, CLIMBERS** and **DECIDUOUS SHRUBS.** ☞ Also a large and varied collection of

EVERGREEN TREES

For **LAWN DECORATION** and HEDGING PURPOSES. Catalogues free. Trees can be safely shipped to any point. Address,

CROMWELL & CONGDON,
Live Agents wanted in every Section. [jy-4t] **51 Light Street, BALTIMORE.**

DORSEY, MOORE & CO.

MANUFACTURERS' AGENTS AND DEALERS IN ALL KINDS OF

Agricultural Implements and Machinery.

AGENTS FOR THE CELEBRATED

Sturdebaker Farm and Freight WAGONS, Taylor Manufacturing Co.'s Steam Engines, Empire Threshers, Daniels' Hay and Straw Fodder Cutter, (best in the market,) **Empire Grain Drills, and Adamant Plows. Grain Cradles, Seed Sowers, Cultivators, Harrows, &c., &c.**

We are the ONLY manufacturers of **Montgomery's Celebrated Improved Rockaway and Little Champion Wheat Fans.**

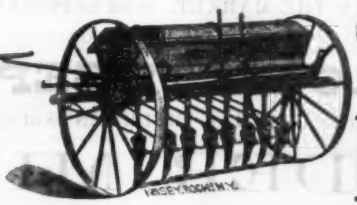
52 S. CALVERT STREET,

Send for circulars. **BALTIMORE, MD.**

BICKFORD & HUFFMAN'S

FARMER'S FAVORITE.

MONARCH OF THE SEEDING.



CHAMPION OF THE Field Trials

Awarded the ONLY MEDAL given to a

"Grain And Seed Drill Combined"

BY THE CENTENNIAL COMMISSION.

Received the ONLY AWARD and MEDAL

A "Fertilizing Attachment"

WAS GIVEN AT PHILADELPHIA, 1876.

Southern Depot and Salesroom,

64 S. Sharp Street, Baltimore, Md.

HENRY P. UNDERHILL,

General Southern Agent.

ADDRESS AGENT for CIRCULARS and TERMS.

JOHN C. DURBOROW

No. 35 LIGHT STREET, BALTIMORE, MD.

GENERAL AGENT FOR

The "Superior" Grain Drill,

Having a PERFECT FORCE FEED and a PERFECT FERTILIZER ATTACHMENT. NO BUNCHING OF THE GRAIN. THE STRONGEST AND BEST-MADE DRILL IN THE MARKET. Send for Price-List and Circulars.

ALSO AGENT FOR

BUFFALO PITTS SEPARATORS

And dealer in AGRICULTURAL IMPLEMENTS of the most improved kinds:

CIDER MILLS

Farm Grist Mills, Corn and Cob Crushers, Feed Cutters, Corn Shellers, &c. ☞Also **Fertilizers and Seeds.**

Send for Circular and Price-List to

JOHN C. DURBOROW,

35 Light Street, Baltimore, Md.

jy-

Dissolution of Copartnership.

BALTIMORE, March 19th, 1878.

The Copartnership heretofore existing between the undersigned, under the name of **J. J. TURNER & CO.**, is this day DISSOLVED, by mutual consent. Either will sign in liquidation.

J. J. TURNER,
J. Q. A. HOLLOWAY.

The undersigned, engaged since 1858 in the manufacture of FERTILIZERS, as a member of the firm of **J. J. & F. TURNER,** BY WHOM the formulas and processes of manufacture of

"EXCELSIOR" AND "AMMONIATED PHOSPHATE"

Were *originated*, and since 1864 a member of the late firm of **J. J. TURNER & CO.**, relying upon his experience and personal reputation, hitherto acquired in the uniform excellence of these fertilizers, offers them IN HIS OWN NAME to the agricultural public.

Having secured the *works of the old firm*, **111 McElderry's Wharf,** with the complete machinery, *specially constructed for their uniform manipulation*, he will continue the manufacture of **EXCELSIOR and AMMONIATED PHOSPHATE** on his own account, with his office adjoining the works, where he will be pleased to see his friends and patrons, assuring them that the FERTILIZERS manufactured BY HIM shall be of the *same uniform and high standard quality* as sold by the *old firms* since their introduction.

JOHN Q. A. HOLLOWAY,
107 McElderry's Wharf.

J. M. LAROQUE'S ANTI-BILIOUS BITTERS

W. E. THORNTON, PROPRIETOR.

BALTIMORE.

A Positive Cure for Headache, Dyspepsia, Nervousness, Constipation and all bilious diseases may be found in J. M. Laroque's Anti-Bilious Bitters. 25 cents a paper. $1.00 a bottle.
W. E. Thornton,
Baltimore and Harrison Streets, Baltimore.

J. M. Laroque's Elixir of Calasaya Bark, a pleasant Cordial, which strengthens the weak and debilitated, is an excellent preventive of Fever, Fever and Ague, &c., and a great Tonic, especially applicable to those nervous diseases incident to Females. $1.25 a bottle.
W. E. Thornton,
Baltimore and Harrison Streets, Baltimore.

The Original and Only Genuine Florida Water of J. M. Laroque, delightfully refreshing and purifying, supersedes Cologne and Bay Rum. An indispensable requisite for the bath and toilet. Price reduced to 50 cents a bottle.
W. E. Thornton,
Baltimore and Harrison Streets, Baltimore.

Pearly White Teeth, Rosy Red Gums, a Fragrant Flowery Breath, are the invariable results of the use of J. M. Laroque's Liquid Odontine, the standard Tooth Wash of the elite and fashionable. 50 cents a bottle.
W. E. Thornton,
Baltimore and Harrison Streets, Baltimore.

If your nearest Druggist does not keep the above articles, write direct to the Proprietor, enclosing the advertised price, and the medicine will be sent you by mail or express. Be particular to write your name and address plain, and give nearest express office.
W. E. Thornton,
Baltimore and Harrison Streets, Baltimore

STEAM ENGINES,

A. B. Farquhar, York, Pa.,

Cheapest and best for all purposes—simple, strong, and durable. Also *Traction Engines* for common roads.

Saw, Grist and Rice Mills, Gins, Presses and Machinery generally. Inquiries promptly answered.

Fig. 1.

Vertical Engines, with or without wheels, very convenient, economical and complete in every detail, best and cheapest Vertical in the world. Fig. 1 is engine in use. Fig. 2 ready for road.

Fig. 2.

Boilers, Cylinders, larger than other makers.

Send for Catalogue.

The Farquhar Separator

(Warranted)

Penna. Agricultural Works, York, Pa.

Steam Engines, Horse Power and Threshers of all kinds. Also, Ploughs, Harrows, Cultivators, &c.

Send for Illustrated Catalogue.
Address A. B. Farquhar, York, Pa.

Berkshires

OF THE

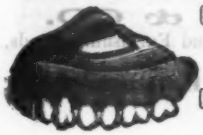
Best Blood & Quality

BRED AND FOR SALE BY

Alex. M. Fulford,

BEL AIR, MARYLAND.

DR. J. EMORY SCOTT,



OPERATIVE & MECHANICAL

DENTIST,

N. E. COR.

Calvert and Monument Streets.

BALTIMORE.

Farm For Sale

—NEAR—

Worcester, Mass.

In all the bargains offered by Western railroads did you ever see anything equal to this?—$15.38 an acre and the buildings thrown in (the fences on the farm cost more than this;) 65 acres, 1½ miles from depot. Fine wood lot, 600 cords. Now keeps 3 cows; can easily be made to keep 6. Mowed by machine. 60 choice fruit trees, bordered by trout brook. Cottage, 6 rooms, painted and papered. Barn 36 by 36; wagon-house, &c. Only $1,000; part cash, balance $50 a year. The wood when marketed will pay for the farm. Remember this is not a highly-colored description, but was taken from the owners right on the farm. This, with hundreds of better farms, fully described in our Farm-List, postpaid to any address.

GEO. H. CHAPIN, Harold Building, Boston.

$66 a week in your own town. Terms and $5 outfit free. Address H. Hallett & Co., Augusta, Maine.

U. G. MILLER & CO.

Ashland, Baltimore Co., Md.

Manufacturers of Plows, Harrows, Cultivators, Drags, Shovel Plows,

And Castings of every description made to order.

The Celebrated Oxford Plows Made to Order.

Repairs promptly attended to. A liberal discount made to those who purchase to sell again.

The patronage of the public is respectfully solicited, and we pledge ourselves to use every effort to render satisfaction.

$50 Will Buy a Reliable HAY OR CATTLE SCALE!

JESSE MARDEN, Southern Scale Factory,

55 S. Charles St., Baltimore.

Scales of every description of our own make always on hand.

Square Box Butter Prints,

FOR SALE BY

Geo. Chipman & Co.

Cor. Calvert and Lombard Sts.,

BALTIMORE, MD.

☞ Also, Brooms, Buckets, &c.

WATER WHEELS.

THE UNEQUALLED JAS. LEFFEL DOUBLE TURBINE WATER WHEEL.

PORTABLE AND STATIONARY STEAM ENGINES, STEAM BOILERS.

SAW, FLOUR AND GRIST MILLS,

MACHINE MOULDED MILL GEARING.

SHAFTING, PULLEYS AND HANGERS

Of Improved Designs, A Specialty

Address, **POOLE & HUNT,**

Send for Circulars. BALTIMORE, MD.

GILPIN'S VEGETABLE LIVER PILLS

Are prepared, with great care, from medical plants, are *coated with sugar* that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver—thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a Bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 28, 1869.

DR. GILPIN—After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say, that the combination is certainly perfect, and comprises the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them not only to my patients, but the entire medical profession. Yours truly, J. M. WISTAR, M. D.

From one of the leading retail druggists of West Virginia:

WESTON, W. VA., June 18, 1869.

MESSRS. CANBY, GILPIN & CO.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, &c., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit—knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable Druggists and Country Storekeepers throughout the United States and Canadas.

Principal Depot, CANBY, GILPIN & CO., Baltimore.

NOAH WALKER & CO.

THE

CELEBRATED CLOTHIERS

OF BALTIMORE, MD.

Announce the introduction of a plan of ordering

CLOTHING AND UNDERWEAR BY LETTER,

to which they call your special attention. They will send, on application, their improved and accurate RULES FOR SELF-MEASUREMENT, and a full line of samples from their immense stock of

Cloths, Cassimeres, Coatings, Shirtings, &c., &c.

A large and well-assorted stock of READY-MADE CLOTHING always on hand, together with a full line of FURNISHING GOODS.

NOAH WALKER & CO.

Manufacturers and Dealers in Men's and Boys' Clothing and Furnishing Goods, either Ready-Made or Made to Order.

Nos. 165 and 167 W. BALTIMORE STREET, Baltimore, Md.

Baltimore Hydraulic Cement Pipe Works,

Cor. Gay St. and Boundary Avenue.

Office, 122 W. Baltimore St.

JAS. E. BRADY, Proprietor.

Manufacturer of the **PATENT HYDRAULIC CEMENT DRAIN, SEWER AND CULVERT PIPE**, from 3 to 24 inches diameter. Also **CHIMNEY TOPS, HOT AND COLD AIR FLUES, CESS-POOL LININGS, VASES, &c.**

Tubing for Bored and other Wells.

This Tubing does not affect the taste of water, like wood and iron, and is the most durable and economical article that can be used for this purpose.

DEVON CATTLE, SOUTHDOWN, LEICESTER AND MERINO SHEEP. POLAND-CHINA, BERKSHIRE and ESSEX HOGS A SPECIALTY.

All bred from the most noted and fashionable strains of Prize-Winning Stock.

I took first premiums in their classes on Devon Cattle, Leicester and Merino Sheep, Poland-China and Essex Hogs, at Virginia State Fair in 1875 and 1876, besides a large number of Prizes taken at Piedmont and Lynchburg Fairs.

Address, F. W. CHILES,
Tolersville, C. & O. R. R., Va.

D. E. WILLIAMS,

70 N. Eutaw Street,

Shirt and Drawers Maker.

We ask a trial of a Sample Shirt. If not satisfactory it may be unconditionally returned.

☞ A form for self-measurement sent by mail.

PATENTS.

Any information relating to obtaining Patents, Caveats, Trade-marks, etc., furnished without charge. Circulars giving full directions free. We publish a book on "How to sell Patents," and which gives much valuable information on Patent law points. Information and assistance afforded those desiring to sell their Patents.

We furnish printed Blanks for selling Rights.

MANN & CO., Patent Agents,
116 W. Baltimore St., opposite Sun Iron Building
BALTIMORE, MD.

IMPORTANT TO STOCK-RAISERS
—AND—
MANUFACTURERS.

The **PHOTO-ENGRAVING DEPARTMENT**
OF THE
NATIONAL BUREAU OF ENGRAVING,

call attention to their process for making Relief Plates from Photograph Negatives, without the intervention of pencil or graver.

Also, Reproductions of

ENGRAVINGS AND PEN-DRAWINGS,

ENLARGED OR REDUCED.

The Plates made by us are *superior substitutes* for *Wood Engravings.*

To the Stock-Raiser wishing to advertise his animals this offers the best means of obtaining the most perfect and life-like representations.

Manufacturers and others wishing Illustrations, can send us Photograph Negatives or Pen Drawings, and in a few days receive from us Electrotypes to print from. Our Pictures are the cheapest, best and most reliable.

Send to us for descriptive circular.

Address,

NATIONAL BUREAU OF ENGRAVING,

Office, 435 Chestnut St., Philadelphia.

Factory, 512 Pine Street.

Dairyman Wanted.

WANTED.—A dairyman, with a family, to run a dairy in Nansemond, Va., ON SHARES. ☞ *Certain and steady market the whole year for Butter.* Buildings, and lands in grass, with all things necessary for success, supplied in September next. Address, **P. O. Box No. 41, Suffolk, Va.**, or the Editor *American Farmer.*

A. G. MOTT,

Manufacturer and Dealer in

Agricultural Implements, Machines and Seeds,

No. 40 Ensor St., Baltimore, Md.

☞ A full line of repairs for Mowers and Reapers. Repairing Machines and Implements a specialty. Plow Castings by piece or ton. A call is solicited.

VIRGINIA LANDS.

UPPER JAMES REAL ESTATE AGENCY,

BY WILLIAM HOLMAN,

CARTERSVILLE, Va.

Who offers for sale upwards of 12,000 acres of land, lying in one of the most desirable regions of Eastern Virginia.

Catalogues sent on application. my-tf

GOLD Any worker can make $12 a day at home. Costly outfit free. Address TRUE & Co., Portland, Maine.

Established] **A. E. WARNER,** [1811.

Manufacturer of

Silver Ware & Rich Jewelry,

English, Swiss and American WATCHES of the Best Makers;
Importer and Dealer in Diamonds, Fine Watches, Silver-Plated Ware, Table Cutlery, &c.

WEDDING PRESENTS,

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses and Shell Jewelry, &c.

All of which is offered at GREATLY REDUCED PRICES.

je-1y **No. 135 W. Baltimore Street, near Calvert, Baltimore.**

DEVON CATTLE
AND SHROPSHIRE SHEEP.

FOR SALE—Thoroughbred young **Devon Bulls** and young Rams of the Shropshire breed; several of the young bulls were sired by the IMPORTED BULL MASTER JAMES, the winner of several prizes in England; amongst others the first prize given to his class at the show of the Royal Agricultural Society of England, held at Birmingham in July, 1876. The young Rams were all sired by *Imported* Rams, purchased at high figures, from one of the very best flocks in England, and several of them are out of Ewes recently imported from the same flock as the Rams, the others being out of Ewes obtained from the celebrated flock of Mr. T. Conver, of Waldberg, near **Haverstraw**, in the State of New York. Also, one *Imported Shropshire Ram*, now a little over three years old. Particulars as to pedigrees, prices, &c., may be obtained by applying to

WILLIAM U. KENNON,
Sabot Island P. O., Goochland County, Virginia.

—WRITE TO—

A. P. OR M. B. ROWE,

CO-OPERATIVE STOCK FARM & POULTRY YARDS,

FREDERICKSBURG, VA.,

For Herd-Book Jersey or Ayrshire Cattle, bred from stock selected in person from best Northern breeders and from "Centennial" Stock Exhibition. Cotswold, Leicester, Shropshire and Southdown Sheep, all bred from best imported stock, and Lambs of each breed for sale in August. Herd-Record Berkshire Swine of best strains, and Essex surpassed by none. Poultry—Choice, well-marked young fowls from all of our varieties will be for sale this fall. Orders for eggs from all classes have closed, except Leghorns. We will continue to fill orders for Leghorn eggs, of either the brown or white variety, at $1.50 per dozen. More premiums have been awarded to our stock at the Virginia State Fairs than that of any other exhibitor in the State. And we would refer all to the whole community in which we live and where our Senior has resided for more than half a century, and particularly to all those whom we have supplied with stock, both North and South,—as we always endeavor to make our stock our best advertisement, and guarantee satisfaction.

ASBESTOS. Indestructible by FIRE or ACIDS.

Do Your Own Painting and Roofing.

Use H. W. JOHN'S Celebrated ASBESTOS materials. Finest Paints, all shades, ready mixed, for outside and inside work.

We sell them by the U. S. STANDARD GALLON, and, as can be readily proven by comparison with others, OUR PACKAGES CONTAIN FROM 10 to 12 PER CENT. MORE PAINT than is usually sold for same quantity.

The best ROOF PAINT in the world. Leaky Roofs and Walls made water-tight with this Paint and ASBESTOS CEMENT. Also FIRE-PROOF PAINT; ready-made ROOFING, light and easily applied; BOILER COVERING; STEAM PACKING, &c. ☞ SEND FOR CIRCULARS.

Baltimore Office, No. 51 LEXINGTON STREET,
F. H. WILSON, Manager.

THOMAS NORRIS & SON,

—AGENTS FOR—

AULTMAN & TAYLOR Separators and Steam Engines,
WESTINGHOUSE'S Vibrators. Clover Hullers and Cleaners and Horse-Powers,
W. A. WOODS' Mowing and Reaping Machines,
TEMPLE'S Porcelain-Lined Cylinder Cucumber Pump,
PENNOCK'S Genuine Corn Sheller, Genuine Van Wickle Fans.

We continue to sell the well-known

Novelty Wheel Hay Rakes,

JERSEY CULTIVATORS,

IRON AGE CULTIVATOR.

(The most popular implement of the day,)

"MALTA" DOUBLE-SHOVEL PLOWS,
GENUINE WALKING CULTIVATORS.

Manufacturers and Dealers in all kinds of

Implements and Machinery, Seeds, &c.

We solicit orders from our old friends and customers.

THOMAS NORRIS & SON, Agts.
42 Light Street, Baltimore.

S. H. SLIFER & CO.

GENERAL AGENTS FOR

Marsh No. 4 Reaper & Mower Combined,

Complete Cultivator and Lion Hay Rake.

ALSO DEALERS IN

Agricultural Implements of all kinds

Our Special Phosphate, (adapted to all crops equally well,)
Dissolved, and Pure Ground Bone,
Reliable Field and Vegetable Seeds, (grown principally by ourselves.)

A GENERAL STOCK OF HARDWARE FOR FARMERS' USE.

EXCLUSIVE AGENTS for WEED SEWING MACHINES

☞ Repairing of all kinds promptly done. Local Agents wanted. Circulars free.

166 N. GAY STREET,
Opposite "Old-Town Bank."

TOBACCO SCREWS OR PRIZES.

TO TOBACCO GROWERS,
COMMISSION MERCHANTS,
PLANTERS AND OTHERS.

A Complete Set of New Patterns, embracing
Stuart's Right and Left, Murray's, and various kinds,
Always on hand, warranted to work true and of the best make.

JAMES BATES'
Iron Foundry and Machine Shop,
Corner Pratt and President Sts., BALTIMORE, MD.

RHODES'
Standard Manures,
☞ PREPARED FOR ALL CROPS.
JNO. M. RHODES & CO.
82 South Street. BALTIMORE.

CHAS. W. HAMILL & CO.
MANUFACTURERS OF
SILVER-PLATED WARE,
28 & 30 N. Holliday Street.
BALTIMORE, MD.
Tea Sets, Waiters, Ice Pitchers, Butter Dishes, Cups, Goblets, and Communion Ware.
REPAIRING, REPLATING AND GILDING IN THE BEST MANNER.

QUINN & DUNCAN,
Carriage Manufacturers,
No. 1 Orchard Street,
One door from Madison Avenue, BALTIMORE.
All work guaranteed. Repairing done promptly, and in a neat and durable manner.

CHARLES M. MILLER,
MANUFACTURER OF
GENTS AND BOYS' DRESS SHIRTS
AND UNDERWEAR,
No. 63 North Eutaw Street, Baltimore,
4th door below Saratoga, East side.

The Chemical Co. of Canton,

MANUFACTURERS OF

Fertilizers and Fertilizing Chemicals.

We Make a Specialty of Mixing on Formula,

PURE FINE GROUND BONE, PURE DISSOLVED BONE, SULPHATE OF POTASH, SULPHATE OF SODA, NITRATE OF SODA, &c., &c.

We offer to the trade our High-Grade Fertilizer,

CHEMICAL CO. OF CANTON'S "CHEMICAL MANURE."

— ALSO —

"COLGATE MANURE,"

Office, 15 SOUTH STREET,

P. O. Box 231. BALTIMORE, MD.

— WORKS: —

Clinton and 1st Sts. and 9th and 10th Avenues, Canton.

CRIFFITH & TURNER,

Agricultural Implement and Seed Warerooms

41 & 43 N. PACA STREET, BALTIMORE, MD.

Have now open a Choice Selection of **Fresh Garden and Field Seeds,**

AND IMPROVED LABOR-SAVING MACHINERY.

GENERAL AGENTS OF THE

HAGERSTOWN WHEEL

Horse Rake

WE NAME IN PART:

Portable Steam Engines, Railway and Sweep Horse Powers, Threshers and Separators, Champion Rye Threshers, Clover Hullers, Mowing and Reaping Machines, Hay Tedders.

FOUST'S HAY LOADER, which takes the Hay from the winrow and delivers it on the wagon. FITZHUGH'S HAY ELEVATOR AND DOUBLE HARPOON FORK, for unloading Hay and delivering it in any part of the mow. FARM AND ROAD WAGONS. The MALTA SHOVEL PLOWS and WALKING AND RIDING CULTIVATORS. The Planet Combined Drill and Wheel Hoe, for sowing all kinds of Garden Seeds and for cultivating the plants. The Hagerstown Grain and Fertilizer Drill. Broadcasting Machines and Lime Spreaders. The Hagerstown Fodder Dissicator. The Fountain Pump for extinguishing fires, washing windows, watering gardens, destroying bugs on vines, &c. Cahoon's Grass-Seed Sowers. The Philadelphia Lawn Mower. Tree Pruners and Pruning Shears. Patent Steel Barb Wire Fencing; never rusts, stains or decays; a complete barrier to the most unruly stock. Stump Pullers, Feed Cutters, Corn Shellers, Corn and Cob Crushers, Chopping Mills, Cider Mills and Presses, &c., &c.

Machinery of all kinds repaired and built to order. SEND FOR DESCRIPTIVE CIRCULARS.

PURE

FERTILIZERS,

For CORN, TOBACCO and other Spring Crops.

PURE FINE GROUND BONE,

STAG SUPER-PHOSPHATE OF LIME,

PURE DISSOLVED RAW BONE.

66° Oil Vitriol, German Potash Salts, Pure Chemicals for making Super-Phosphate at the lowest market price.

R. J. BAKER & CO.

36 and 38 CHARLES STREET,

BALTIMORE, MD.

SPECIAL TERMS TO LARGE DEALERS.

G. O. BROWN, Proprietor.

MONTVUE POULTRY YARD'S
BROOKLANDVILLE MD.

Now is the Time to Secure Good Breeding Stock Cheap.

☞ SURPLUS BIRDS MUST BE SOLD. ☜

SPLENDID ROUEN DUCKS and PEKINS at half former prices. Choice BRAHMAS, COCHINS, LEGHORNS, HOUDANS at reasonable prices. GAMES—fine and at low prices.

Send stamp for particulars, catalogues, &c. ☞ Eggs in season from any of my breeds.

Lee's Prepared Agricultural Lime,

FOR WHEAT. CLOVER AND OTHER GRASSES.

"It Prevents Smut."

The more it is tried the more popular it becomes. On the last crop it proved equal to, and in many cases much better than, high-priced Fertilizers. All who use it acknowledge its superiority as a **PERMANENT IMPROVER OF THE SOIL.**

☞ SEND FOR PAMPHLETS AND TESTIMONIALS.

L. J. WARREN.

Agent for the Manufacturer,

Price only $15 per ton. Put up in bags and delivered to Depots and Vessels in the city. 18 E. Falls Avenue, Baltimore.

—1878.—

Rosebank Nurseries,

GOVANSTOWN, BALTIMORE COUNTY, MD.

ORNAMENTAL AND FRUIT TREES, FLOWERING SHRUBS, AND HERBACEOUS PLANTS.

We invite the attention of the public to our select stock of the following: **STANDARD and DWARF PEARS,**—2, 3 and 4 years old. **APPLES**—Standard and Dwarf. **CHERRIES**—Standard and Dwarf. **APRICOTS, CRAB APPLES, MULBERRIES, GRAPE VINES,** of the most popular kinds, together with other small fruits.

Our **COLLECTIONS** of **ORNAMENTAL** Trees and Shrubs are large, and embrace most of the rarest sorts.

ROSES on their own roots, with the newest of **BEDDING-OUT** plants by the dozen or 1,000, for which we have issued a separate Catalogue.

☞ **SPECIAL.**—60,000 one and two-year old OSAGE ORANGE plants for hedges.

CATALOGUES FORWARDED ON APPLICATION. ORDERS BY MAIL PROMPTLY ATTENDED TO. ALL GOODS DELIVERED IN BALTIMORE FREE OF CHARGE.

W D. BRACKENRIDGE.

Clairmont and Furley Hall Nursery.

ESTABLISHED 1828.

The largest stock and greatest variety of fruit and ornamental trees, foreign and domestic, to be found in the United States,—comprising apple, peach and pear trees, (standard and dwarf) evergreen and shade trees; all varieties of grape vines, currant, gooseberry, and blackberry bushes, strawberry plants, etc., etc.

TERMS TO SUIT THE TIMES.

Nursery is located on the Bel-Air Road, Baltimore County, and can be reached by way of Gay street.

WM. CORSE & SONS,

P. O. Box 248, BALTIMORE, MD

ja-6m

CHEMICAL MANURES.

Agricultural Lectures

DELIVERED AT

The EXPERIMENTAL FARM

AT

VINCENNES, in 1867,

BY GEORGE VILLE.

Translated by Miss E. L. Howard, of Georgia.

Copies of this valuable work may be had at the *Office of the American Farmer*, or will be sent by mail on receipt of the price—50 cents.

WALNUT HILL STOCK FARM,

Spottsylvania County, Va.

I am breeding Thoroughbred Devon Cattle, Merino and Southdown Sheep, Poland-China, Essex and Berkshire Hogs. Also Light Brahmas, White-faced Black Spanish, White Leghorns, Pekin Ducks and Bronze Turkeys.

My stock took many first premiums at the Piedmont and State Fairs.

I have selected my stock with great care from the best herds in the United States, and intend to be excelled by no one.

Orders solicited and satisfaction guaranteed. Address

Z. C. DANIEL, Twyman's Store,
Spottsylvania Co., Virginia.

GOLD. Great chance to make money. If you can't get gold you can get greenbacks. We need a person in every town to take subscriptions for the largest, cheapest and best Illustrated family publication in the world. Any one can become a successful agent. The most elegant works of art given free to subscribers. The price is so low that almost everybody subscribes. One agent reports making over $150 in a week. A lady agent reports taking over 400 subscribers in ten days. All who engage make money fast. You can devote all your time to the business, or only your spare time. You need not be away from home over night. You can do it as well as others. Full particulars, directions and terms free. Elegant and expensive Outfit free. If you want profitable work send us your address at once. It costs nothing to try the business. No one who engages fails to make great pay. Address "The People's Journal," Portland, Maine.

PRATT'S ASTRAL OIL

WILL NOT EXPLODE.

Wholesale and Retail.

LAMPS OF EVERY DESCRIPTION,

For Sale by W. & H. SPILCKER,

Agents for Chas. Pratt & Co. New York. 136 Baltimore St.

o-6m

BERKSHIRE PIGS.

The subscriber offers for sale a select lot of Berkshires of various ages, bred from stock imported by Hon. M. H. Cochran of Canada, T. S. Cooper and Chas. B. Moore of Pennsylvania, and other well-known breeders.

Animals warranted true to description and pedigree, which will be furnished on application. Orders solicited and satisfaction guaranteed. Prices to suit the times.

THOS. J. LEA,

Brighton P. O., Montgomery Co., Md.

PENNSYLVANIA ROUTE,

FORMED BY THE

NORTHERN CENTRAL

AND

PENNSYLVANIA RAILROADS

ON THE

West, Northwest and Southwest,

To PITTSBURG, CINCINNATI,

LOUISVILLE, INDIANAPOLIS,

CHICAGO, ST. LOUIS,

AND ALL OTHER

PROMINENT POINTS.

BALTIMORE & POTOMAC

AND

Alexandria & Fredericksburg Railways

ON THE SOUTH TO

Washington, Richmond

AND ALL POINTS IN THE

Atlantic and Gulf States.

THE ONLY

ALL RAIL LINE

WITH NO

OMNIBUS TRANSFER AT WASHINGTON.

NORTHERN CENTRAL

AND

PHILADELPHIA and ERIE RAILWAYS

ON THE NORTH TO

HARRISBURG, WILLIAMSPORT, ELMIRA, WATKINS GLEN, ROCHESTER, ERIE, BUFFALO, NIAGARA FALLS.

☞ Baggage called for and checked at Hotels and private residences through to destination. Sleeping and Parlor Car accommodations secured.

Through tickets sold and information given at company's office.

N. E. Corner Baltimore and Calvert Streets,

At Depot N. C. Railway,

UNION DEPOT, CHARLES STREET STATION,

And PENNSYLVANIA AVENUE STATION.

FRANK THOMSON, General Manager. L. P. FARMER, Gen'l Passenger Ag't, Penna. and N. C R. R.

ATTENTION LADIES.

READY MADE GRASS LINEN SUITS at Wholesale Prices.

a Piece Suit by Mail, Post Paid, $2.00.
3 Piece Suit by Mail, Post Paid, $2.50.
Orders for 10 or more Suits by Express and charges prepaid. The accompanying ILLUSTRATION is a CORRECT COPY of the SUITS made from PHOTOGRAPHS taken EXPRESSLY for the ENGRAVER. These SUITS we are manufacturing in LARGE QUANTITIES for the Summer Trade. They are NICELY made and ELEGANTLY TRIMMED, in BROWN or BLACK, headed with a WHITE PIPING. BUST MEASURES range from 28 to 42 inches, and LARGER SIZES are MADE TO ORDER when DESIRED, without EXTRA CHARGE. Owing to the ENORMOUS CHARGES made by dressmakers, at the present time in MAKING SUITS, the economy in BUYING Suits ready made at such LOW FIGURES is readily seen. To ladies acting as AGENTS, and sending orders for TEN SUITS, we will give ONE SUIT FREE.

In sending your orders, write your Name, Post Office, County and State PLAINLY, so that no mistake will occur. Send all money by Registered Letter, Money Order or Bank Draft. We solicit your orders and guarantee satisfaction.

Address all Orders to **J. B. GAYLORD & CO.**, 93 Wells St., Chicago, Ill.

IMPROVED STOCK.

AMERICAN FARMER AGENCY

For the Purchase and Sale of Live Stock of Improved Breeds, Cattle, Horses, Sheep, Swine, Poultry, Dogs, &c.

In this vicinity, of some particular kinds, a better selection can be made than elsewhere, while superior facilities exist for their safe and prompt shipment. Especial attention will be given to the selection from the stocks of reliable breeders, and the careful shipment of such animals, fowls, &c. as may be ordered. Terms cash, (or its equivalent.) All who have improved stock for sale, and those who wish to purchase, are invited to address

American Farmer Agency,
GEORGE O. BROWN, Manager,
128 W. BALTIMORE STREET, BALTIMORE.

Good Pantaloons, $2.00!

OUR OWN MAKE.

SUITS OF ALL GRADES,

Equal in Workmanship to Ordered Work, from $7.00 to $25.00.

☞ **LARGE STOCK OF PIECE GOODS FOR CUSTOM-WORK** at less than usual rates and better work guaranteed, at

L. BAR'S TAILORING HOUSE, Cor. Gay & Fayette Sts., Baltimore.

(COPYRIGHT.)

PARIS GREEN

FOR KILLING THE

POTATO BUG & COTTON WORM.

WE MANUFACTURE FOUR GRADES:

Strictly Pure, Chesapeake, Potomac, Patapsco.

Packed in barrels, half-barrels, 100 lb. kegs, and 14, 28 and 56 lb. Iron Cans. We have thoroughly tried it, and found it effectual and certain, if used as recommended by us:

Take 2 ounces of "Strictly Pure" or 2½ ounces "Chesapeake," or 3 ounces "Potomac," or 3½ ounces "Patapsco" to 1 pound of flour; mix the flour with 3 gallons of water; strain the lumps out, then add the Paris Green; use a watering-pot to sprinkle the plants, stirring occasionally while applying. To an acre of plants, it will require from 2 to 3½ pounds of Green, according to quality used. **For sale to the trade only**, by

WM. DAVISON & CO., Manufacturers, 104 W. Lombard St., Baltimore.

BUCKEYE MOWER and REAPER,

☞ THE SIMPLEST, BEST MADE AND LIGHTEST DRAFT MACHINE ON THE MARKET. ONE FOURTH OF THE MOWERS AND REAPERS MADE IN AMERICA ARE "BUCKEYE." THE "BUCKEYE" IS A FRONT-CUT MACHINE.

SWEEPSTAKES THRESHER AND CLEANER.

The most popular Thresher with Threshermen and Farmers. It never fails to do good work. A Thresherman who buys a Sweepstake is sure of getting work for it, when those having other Threshers cannot.

ECLIPSE Agricultural ENGINE.

Best, Cheapest, and most Economical Engine in the Market.

Awarded first Premium at Cincinnati Exposition, 1874; Maryland State Agricultural Society, 1874 and 1877; Silver Medal at Virginia State Agricultural Society, 1874; North Carolina State Fair, 1875, and others. Thoroughly warranted in every respect, and especially adapted to wants of Threshermen, Sawing Lumber, Farm Work, &c.

Circular Saw Mills, Wheel Horse Rake, Nonpareil and Victor Corn and Cob Mills, Mill Stones, Bolting Cloths, Eureka and other Smut Machines, Belting, Spindles, Mill Picks, Portable Farm and Grist Mills, Buckeye Grain and Fertilizer Drill, Birdsill Clover Huller, Needle Cotton Gin, &c.

Cucumber-Wood Pumps,

With Patent Cast-Iron Cylinders, warranted not to cut out or scale off, as is the case with GALVANIZED IRON-LINED and PORCELAIN-LINED CYLINDERS. Every Pump provided with *Patent Anti-Freezer Attachment.*

The Best is the Cheapest.

The Watt and Ball Plows,

UNEQUALLED for strength, durability, perfect work, light draught, and freedom from choking.

☞ **Prices and Descriptive Circulars Furnished on Application, and Correspondence solicited from all wanting anything in my line.**

JOSHUA THOMAS, 53 Light St., Baltimore.

ESTABLISHED 1848.

HORNER'S

CONCENTRATED

SUPER-PHOSPHATE

FOR ALL CROPS.

It is made of the best and most concentrated materials, possesses all the virtues of PERUVIAN GUANO and BONE-DUST combined, and is well adapted to Wheat, Corn, Oats, &c., producing abundant crops where all others fail. Having a large percentage of Soluble and Precipitated **Phosphoric Acid and Ammonia**, it is without doubt **the richest Commercial Fertilizer in the country.**

HORNER'S

BONE-DUST

Made only of Slaughter-house Bones, contains a larger percentage of AMMONIA and BONE PHOSPHATE LIME than any other brand in the market.

WE OFFER

One Thousand Dollars!

For the Detection of any Impurity in our Manufacture of Bone.

We do not steam or bake our Bones, or otherwise treat them so as to destroy the animal matter, which is rich in ammonia.

The Best Article in the Market

HORNER'S

Super-Phosphate of Lime

—OR—

DISSOLVED BONE,

MADE OF PURE SLAUGHTER-HOUSE BONES.

It is richer in Soluble Phosphoric Acid and Ammonia than any similar article in the market.

CHEMICALS

And other materials for making

Home Fertilizers

Muriate Potash, Kainit,
Sulphate Soda, Plaster,
Peruvian Guano, Oil Vitriol,
Nitrate Soda, Dried Blood,
Dissolved South Carolina,
Dissolved Raw Bone, &c., &c.

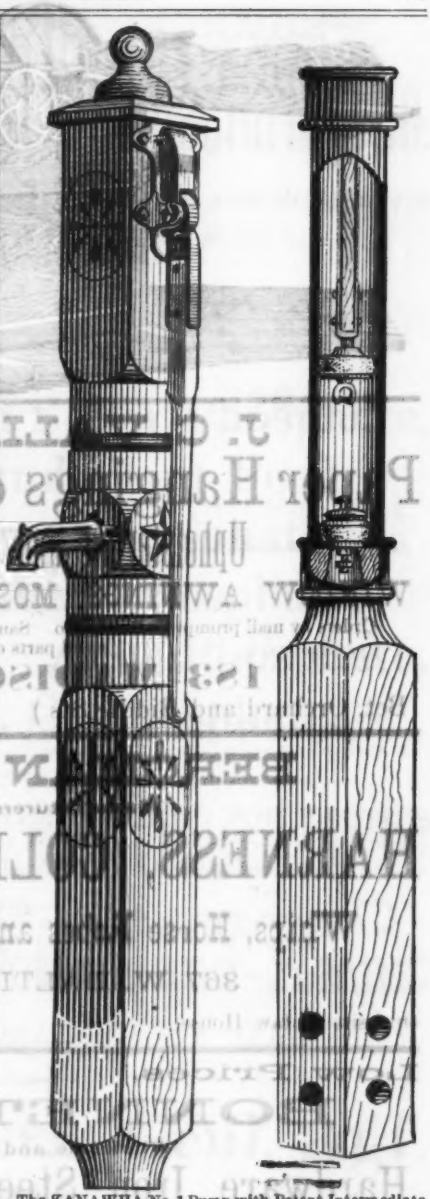
A full supply of PURE Materials always on hand and for sale at lowest market prices.

Write or call before buying elsewhere.

Joshua Horner, Jr., & Co.

COR. BOWLY'S WHARF AND WOOD STREET,

BALTIMORE, MD.



The KANAWHA No. 1 Pump with Patent Intermediate Improved Porcelain-Lined Cylinder and Rubber-Packed Valves,

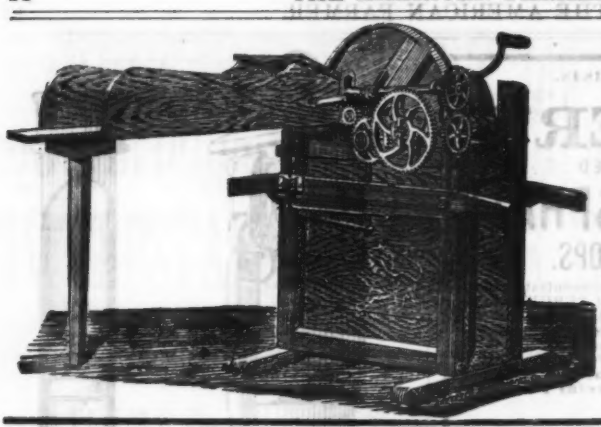
MANUFACTURED BY

Kanawha Pump Works,

88 CAMDEN STREET,

BALTIMORE, MD.

☞Send for Circulars and Price-Lists.



THE IMPROVED

LION FEED MASTICATOR,

Is the greatest feed economizer in the world!

DOWN! NOTICE! DOWN!

2-Horse Triple-Geared Pelton Power....Only $40
4 " " "

THE

Maryland Fertilizing and Manufacturing Co.

Offer to the public the following well-known and reliable brands of *FERTILIZERS*,—all of their own manufacture:

Tobacco Food,
Cotton Food,
Ammoniated Super-Phosphate,
Sangston's Cereal and Plant Food,
Alkaline Super-Phosphate,
Dissolved Phosphate,
Acid Phosphate,
Fine Ground S. C. Phosphate.

☞ALSO FERTILIZERS MANUFACTURED FOR PARTIES FURNISHING THEIR OWN FORMULÆ.

☞ **Muriate of Potash and Kainit**

CONSTANTLY IN STORE AND FOR SALE.

J. EDWIN MYERS, Genl. Agt.

H. C. HOWARD, Secretary.

No. 4 S. HOLLIDAY STREET,

BALTIMORE, MD.

ap-6m

GRANGERS' BOOT AND SHOE HOUSE.

The Old-Established C. O. D. House of Baltimore.

Thanking our customers for the patronage of past years, we take pleasure in presenting them and the general public with our List (for the spring and summer of 1876) of such goods as are in constant use, at the lowest jobbing prices. From our past experience, from our extra facilities, and from the immense and growing magnitude of our sales, we are now enabled to offer in this List *the greatest bargains in Boots and Shoes ever offered. Our customers number thousands from all parts of the United States, who have bought and used our goods for years.*

We sell Goods direct to the people at jobbing prices, cheaper than the country stores buy them wholesale on the credit system, and save all the profit of the Middle-men.

Buy your Goods from first hands, the same as dealers do, and save what they add to the prices to pay their expenses, and to give them a profit.

We do a Jobbing Trade, selling Goods at the lowest wholesale prices, only we sell direct to the people in clubs or otherwise, instead of to dealers.

WHY, AND HOW WE SELL SO CHEAP.

We have pursued the C. O. D. plan for years; we have built up a good paying trade; it is popular with our customers. We know that by selling Goods on this plan we give our customers better bargains than on the old plan of credit. By giving better bargains we increase our trade.

EXCLUSIVELY FOR CASH.

We have buyers in New York, Philadelphia and Boston, who watch the market, wait for bargains, watch the bankrupt sales, the trade sales, and in the ways and places known to experienced buyers, and choose Goods for cash at the lowest figures possible. Our customers are not asked to pay for goods before they get them. The fact of being established so long, and selling such large amounts of Goods, gives us all the advantages that can accrue from such a plan; and we can now afford to sell much cheaper than we did at first.

☞ The C. O. D. plan gives our customers all the benefits to be derived from **CO-OPERATION.** With the large sales that we make, we lower our prices of Goods to our patrons, and are simply taking advantage of available and legitimate avenues of trade to increase our business.

We are the exclusive Agents for

EDWIN C. BURT'S NEW YORK FINE SHOES FOR LADIES, MISSES AND GENTLEMEN.

GENTLEMEN'S DEPARTMENT.

Gents' Buff Pegged Shoes	$1 00	Gents' French Calf Hand Stitched Boots, Extra Quality	5 00
Gents' Buff Pegged Prince Alberts	1 75	Gents' Buff Stitched Boots, Extra Quality	3 75
Gents' Calf Sewed Prince Alberts	2 25	Gents' Kip	2 75
Gents' French Calf English Ties, Sewed	2 75	Gents' Kip, Extra Quality	3 50
Gents' Lasting Gaiters	1 50	Gents' Extra Quality Water Proof Boots	3 75
Gents' Buff Pegged Congress	1 50	Gents' Heavy Plough Shoes	1 65@ 1 75
Gents' Buff Sewed Congress	2 00	Gents' Extra Quality Plough Shoes	1 85
Gents' Buff Plain Congress	1 60	Gents' Heavy Pegged Balmorals	1 40
Gents' Calf Boxed Toe Sewed Congress Gaiters	2 00	Gents' Heavy Pegged Double Sole Balmorals	1 65
Gents' Fine Calf Sewed Congress Gaiters	2 25	Gents' Kip Boots	3 25
Gents' Calf Stitched Box Toe Gaiters	2 75	Gents' Extra Quality Kip Boots	4 00
Gents' French Hand Stitched Congress	3 75	Gents' Long Legged Kip Boots	3 75
Gents' Calf Congress Gaiters, Pegged	1 75	Gents' Long Legged Kip Boots, Extra Quality	4 00
Gents' Buff Pegged Boots	2 75	Russia Leather Water Proof Boots	3 50
Gents' Calf Pegged Boots, Extra Quality	3 50	Water Proof Hunting Boots	4 00
Gents' Calf Hand Sewed Boots	4 25	Gents' Split Leather Boots	2 50
Gents' Prime Stitched Calf Boots	4 00	Gents' Extra Heavy Split Leather Boot	3 00
Gents' Calf Pegged Boots, Extra Quality	3 50		

LADIES' DEPARTMENT.

Ladies' Lasting Congress Gaiters	$1 00	Ladies' French Leather Button, Extra Quality	2 25
Ladies' Lasting Balmoral Gaiters	1 00	Ladies' French Kid Button Boots	2 75
Ladies' Lasting Kid Foxed Gaiters	1 25	Ladies' Kid Lace Balmorals	2 00
Ladies' Lasting Brush Kid Foxed Gaiters	1 50	Ladies' Morocco Balmorals, high cut	1 50
Ladies' Lasting Kid Foxed, Extra Quality	2 00	Ladies' Morocco Balmorals, high cut, Extra Qual	1 75
Ladies' Lasting Slippers	60	Ladies' Morocco Balmorals, all styles	1 25
Ladies' Lasting Buskins Slippers	75	Ladies' Calf Pegged High Cut Balmorals	1 15
Ladies' Kid Heeled Slippers	75	Ladies' Calf Pegged High Cut, Extra Quality	1 37
Ladies' Kid Croquet Slippers	1 15	Ladies' Calf Sewed High Cut Balmorals	1 75
Ladies' Kid Newport Ties, Extra Quality	1 50	Ladies' Calf Sewed Extra Quality Balmorals	2 00
Ladies' Lasting Button Boots, (plain)	1 50	Ladies' Goat Leather Balmorals, Heavy	1 25
Ladies' Lasting Button Boots, Extra Fine	2 00	Ladies' Buff Pegged Shoes	1 00
Ladies' Lasting Kid Foxed Button	1 50	Ladies' Buff Pegged, Extra Quality	1 25
Ladies' Lasting Kid Foxed Button, Extra Fine	2 25	Ladies' Heavy Split Balmorals	90
Ladies' French Leather Button Boots	1 75		

MISSES' AND BOY'S DEPARTMENT.

Misses' Lasting Balmorals, Plain	75@1 00	Misses' Kid Foxed Button	1 50@2 00
Misses' Lasting Balmorals, Extra Quality	1 15@1 25	Misses' Calf Pegged Balmorals	1 00@1 25
Misses' Lasting Kid Foxed Balmorals	1 25@1 50	Misses' Calf Sewed Balmorals	1 35@1 50
Misses' Fine Morocco Balmorals	1 25@1 50	Ladies' and Misses' White Kid Boots, Slippers and Fancy Shoes of all Styles on hand.	
Misses' Fine Kid Balmorals	1 37@1 50		
Boy's Calf Pegged and Sewed Balmorals	$1 25@1 50	Boy's Heavy Kip Boots	1 50@1 75
Boy's Calf Sewed Congress Gaiters	1 50@1 75	Boy's Kip Boots, Extra Quality	2 00@2 25
Boy's Calf Pegged Congress	1 25@1 40	Boy's Fine Pegged Boots	1 75@2 00

We allow 12 per cent. discount to Patrons of Husbandry. Also an additional percentage on each dollar for the person making up the Club.

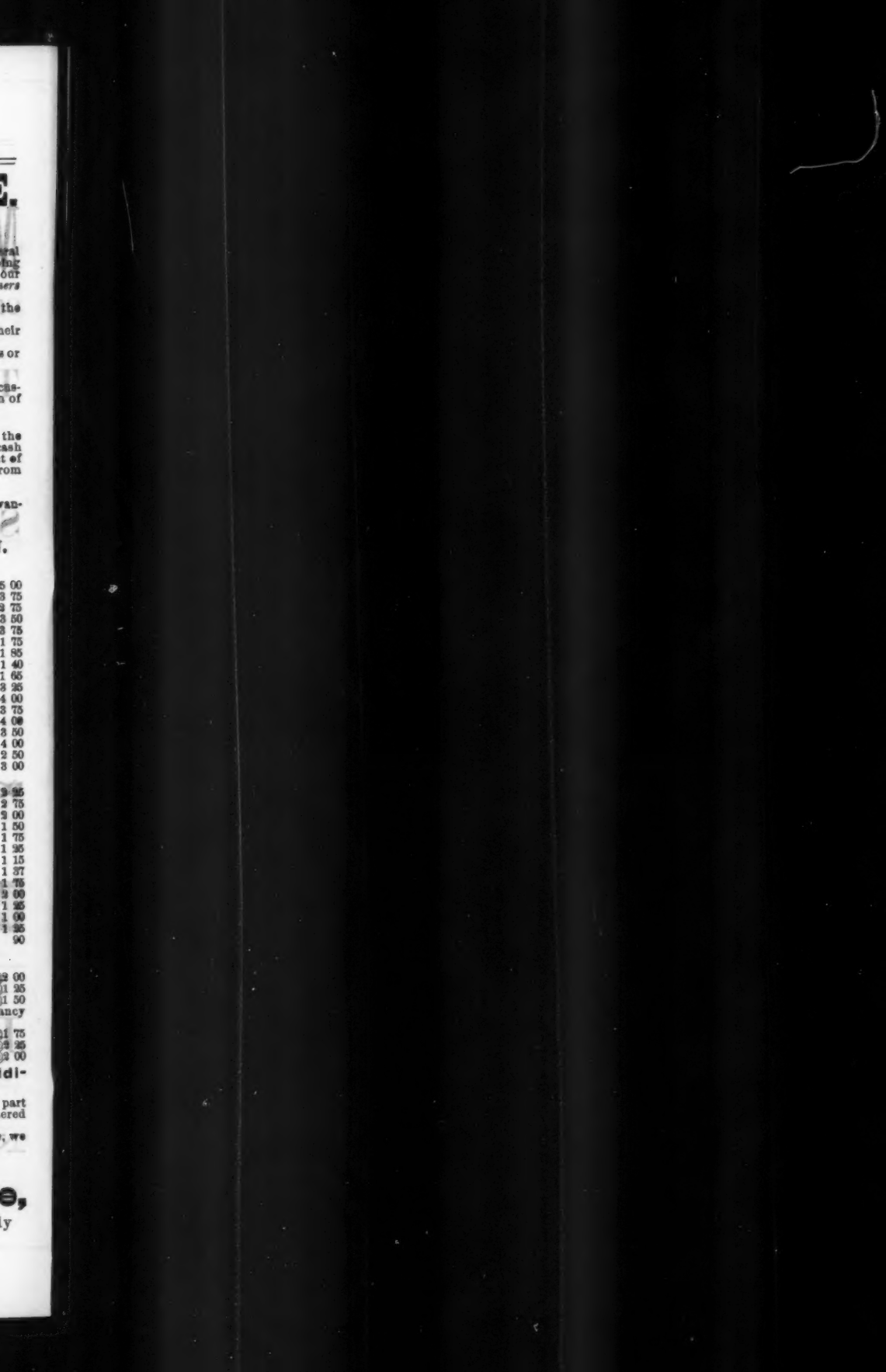
We can now also send by mail single pairs of shoes or packages to any address, at 18 cents per pair to any part of the United States. All orders should be accompanied with the money, Post-Office Money Order, or in Registered Letters, or C. O. D. by Express.

We guarantee to give satisfaction, and anything purchased of our house which may not suit after purchase, we will exchange or refund the money within six months after purchase. ☞ Send Stamp for Printed Catalogue.

The Customer's Confidence is Never Abused.

Weinberger's C. O. D. Shoe House,

fe **81 N. EUTAW STREET, BALTIMORE.** 1y



Chesapeake Chemical Works.

OIL VITRIOL.

MANUFACTURERS AND MANIPULATORS OF PHOSPHATES ON ORDERS AND FORMULAS FURNISHED BY OUR FRIENDS.

Having completed extensive improvements and additions to our Works, giving us increased facilities, we are now prepared to execute orders with greater promptness, and deliver goods in much better mechanical condition than heretofore.

We offer to the Trade the following Goods, all of which are absolutely Free from Adulteration:

DISSOLVED GROUND BONE,

Containing 3 per cent. of Ammonia.

DISSOLVED SOUTH AMERICAN BONE ASH.

Containing 40 to 44 per cent. Soluble Bone Phosphate.

DISSOLVED SOUTH CAROLINA PHOSPHATE.

Containing 27 to 30 per cent. Soluble Bone Phosphate.

To meet the demand for a high-grade Fertilizer, we are offering **SLINGLUFF'S NATIVE SUPER-PHOSPHATE**—prepared entirely from Animal Bone—highly ammoniated.

Also, **SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE.** This we can confidently recommend as one of the best fertilizers sold in the market at a low price.

SLINGLUFF & CO.

OFFICE, 155 W. Fayette Street. **WORKS, Foot of Leadenhall St.**

BALTIMORE.

[Je-1y]

To WHEAT GROWERS

We are now preparing our Usual Stock of

STANDARD FERTILIZERS

FOR THE WHEAT CROP.

SOLUBLE SEA ISLAND GUANO,

Well-known and of undoubted excellence.

EMPIRE GUANO,

A high-grade Fertilizer of known merit.

Ammoniated Alkaline Phosphate,

An article specially prepared for Wheat, and sold on satisfactory terms to Grangers. Endorsed by the Patrons, who have used it for the past four years. For sale by Grange Agents at RICHMOND, NORFOLK, PETERSBURG, ALEXANDRIA, and BALTIMORE.

Raw, Steamed and Dissolved Bones, Potash Salts,

IN STORE AND FOR SALE.

☞ SPECIAL COMPOUNDS PREPARED ON ORDERS.

R. W. L. RASIN & CO.

S. W. Cor. South and Water Sts.

BALTIMORE, MD.